Amateur Radio

JOURNAL OF THE WIRELESS INSTITUTE
OF AUSTRALIA
VOL 57, NO 5, MAY 1989

1989 Convention Report • All about Z-Matches • Scandinavia on six

Amateur Radio

Cover

Last month it was a crystal set, but this month our cover picture represents much higher technology (quite literally). It shows the satellite AMSAT-OSCAR 13 prior to its launch last year from Kourou in French Guyana. Pictured with the satellite are (from left to right):

Werner Haas DJ5KQ (AMSAT-DL)
B Lacoste (European Space Agency)
Dr Karl Meinzer DJ4ZC (AMSAT-DL)
Photo: W. Gladisch, April 1988

Deadlines

	Editorial	Hamads
June	8/5/89	10/5/89
July	12/6/89	14/6/89
August	10/7/89	12/7/89

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Special Features

Reviews

Technical Articles

Regular Features

Amateur Radio

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Material should be sent direct to PO Box 300, Caulfield South, Vic. 3162, in accordance with the deadline dates shown on page 1 of this issue.

Acknowledgement may not be made unless specifically requested. All important items should be sent by Certified Mail. The editor reserves the right to edit all material, including Letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason.

EDITOR'S COMMENT

By the News Editor

Amateur Radio magazine, the hournal of the Wireless Institute of Australia brings you timely news and information.

Want to be informed about your hobby? Then you can't affort to miss a monthly copy of the publication you're now holding.

In recent months AR magazine has been the only publication consistently bringing you news about happenings affecting your hobby.

Among the topics covered have been Third Party Traffic, Examination Devolvement, Six Metre band operator restrictions, withdrawal of the 576 MHz band, DOTC interference investigation charge, changes to callsign suffixes, special event callsigns, and the IARU region 3 conference.

The WIA has the inside running on many developments and when it's news you will read it reported authoritively in the WIA membership magazine.

We have published the latest DXCC countries list, band plans, the WIA position paper on packet radio, and an update on Australia's revived time and frequency service VNG.

Through the Institute's support of AMSAT this magazine is the only one providing news on the expanding world of amateur satellites.

Award hunters and those wanting to sharpen up their skills by entering contests can find the information they want.

As we near the peak of the sunspot cycle the HF bands are teeming wth DX to be hooked. Each month our DX column will keep you informed.

Events overseas have been included in AR magazine as a deliberate policy to keep the Australian radio amateur informed about what is happening in the wide world of amateur radio.

The prospect of New Zealand radio amateurs being allowed to pass Third Party Traffic and use phone patch has been published first in this magazine.

Emergency communications during Hurricane Gilbert and the legal go ahead for our hobby in Thailand have also been reported first.

Feature articles have included Australian's working the Soviet space station MIR, the 60th anniversary of Australian television, the Australian Bicentennial Bike Ride, QRP in the 1920s, a perspective on India, and a VK XYL the JA maritime mobiles call their lighthouse.

We will continue to bring you equipment reviews — both on the very latest gear and the equipment on the second hand market.

Those interested in the technical and constructional aspects of our hobby are also well served.

Amateur Radio magazine is a membership service provided by the WIA.

Just think about it — in commercial terms you could expect to pay around $40 to subscribe to similar magazines — yet this is included in your annual WIA membership fee.

The combination of Amateur Radio magazine and WIA membership service is true value for money.

73
Jim Linton VK3PC
News Editor

Chips to track strays

The Marin County Humane Society in California plans to implant microchips into pet dogs and cats to serve as electronic nameplates for instant identification.

Every lost, stolen or strayed pet which arrives at its animal shelter will have injected in the shoulder a rice grain-sized chip before being handed back to a claiming owner or sold to a new one.

The chip has a 10-digit identification number which can be determined by the use of a hand held electronic wand.

The Society wants all pet owners to make sure their dog or cat has a chip on its shoulder so they can be quickly identified.

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DIVISIONS

VK1 — ACT Division

GPO Box 600
Canberra ACT 2601

Officers		
President	Ted Pearce	VK1AOP
Secretary	Ian Burrell	VK1BR
Treasurer	Ken Ray	VK1KEN

Broadcasts
3.570 MHz
2m ch 6950
70cm ch 0525
2000 hrs Sun

Fees

Full (F)	$44.00
Assoc (A)	$44.00
Full (C)	$44.00
Assoc (T)	$44.00
Pens. (G)	$33.00
Stud. (S)	$31.00
Family (X)	$25.00

VK2 — NSW Division

109 Wigram St
Parramatta NSW 2124
(PO Box 1066 Parramatta)
Phone (02) 689 2417

Officers		
President	Roger Henley	VK2ZIG
Secretary	Tim Mills	VK2ZTM
Treasurer	David Horsfall	VK2KFU

(R Denotes repeater) Times 1100 and 1930 on Sun
1.845 MHz AM, 3.595 AM/SSB , 7.146 AM (1100 only)
28.320 SSB, 52 120 SSB 52.525 FM
147.000 FM(R) 438.525 FM(R)
594.750 (ATV Sound) Relays also conducted via many repeaters throughout NSW.

F	$41.50
A	$39.50
C	$41.50
T	$39.50
G	$34.50
S	$22.50
X	$24.50

VK3 — Victorian Division

38 Taylor St
Ashburton Vic 3147
Phone (03) 269 9162

Officers		
President	Jim Linton	VK3PC
Secretary	Peter Mill	VK3ZPP
Treasurer	Rob Halley	VK3XLZ

1.840 MHZ AM, 3.615 SSB,
7.085 SSB, 147.250 FM(R) Mt Macedon
147.225 FM(R) Mt Baw Baw
146.800 FM(R) Mildura
438.075 FM(R) Mt St Leonard 1030 hrs on Sun

F	$50.00
A	$45.00
C	$50.00
T	$45.00
G	$38.00
S	$27.00
X	$27.00

VK4 — Queensland Division

GPO Box 638
Brisbane Qld 4001
Phone (07) 349 7788

Officers		
President	David Jones	VK4NLV
Secretary	John Aarsse	VK4QA
Treasurer	Eric Fittock	VK4NEF

3.650 MHz, 7.118, 14.342,
18.132, 21.175, 28.400,
52.525 regional 2m repeaters and
1296.100 0900 hrs Sunday
Repeated on 3.605 & 147.150 MHz, 1930 Mon

F	$45.00
A	$45.00
C	$45.00
T	$45.00
G	$36.00
S	$27.00
X	$27.00

VK5 — South Australian Division

Thebarton Rd
West Thebarton SA 5031
(GPO Box 1234)
Adelaide SA 5001)
Phone (08) 352 3428

Officers		
President	Don McDonald	VK5ADD
Secretary	Hans van der Zalm	VK5KHZ
Treasurer	Bill Wardrop	VK5AWM

3.550 MHz, 14.175, 28.470, 53.100,
147.000 FM(R) Adelaide
146.700 FM(R) Mid North
146.900 FM(R) South East
ATV Ch 34 579.00 Adelaide
ATV 444.250 Mid North
(NT)3.555, 146.500, 0900 hrs Sun

F	$44.00
A	$44.00
C	$44.00
T	$44.00
G	$35.00
S	$26.00
X	$26.00

VK6 — West Australian Division

GPO Box 10
West Perth WA 6005

Officers		
President	Alyn Maschette	VK6KWN
Secretary	Pending	
Treasurer	Pending	

146.700 FM(R) Perth, at 0930 hrs Sun,
relayed on 3.560 MHz, 7.075, 14.110, 14.175,
21.185, 28.485, 52.080, 438.525(R)
Country relays 3.582, 147.350(R) Busselton
146.900(R) Mt William (Bunbury)
Broadcast repeated on 3.560 at 1900 hrs.

F	$42.00
A	$42.00
C	$42.00
T	$42.00
G	$35.00
S	$22.00
X	$23.00

VK7 — Tasmanian Division

PO Box 1010
Launceston TAS 7250

Officers		
President	Mike Wilson	VK7ZWW
Secretary	Peter Frith	VK7PF
Treasurer	Peter King	VK7ZPK

146.700 MHZ FM (VK7RHT) at 0930 hrs Sun
relayed on 147.000 (VK7RAA), 146.750 (VK7RNW),
3.570, 7.090, 14.170, 52.100, 144.100 (Hobart)
Repeated Tues 3.590 at 1930 hrs

F	$42.00
A	$42.00
C	$42.00
T	$42.00
G	$38.00
S	$24.00
X	$22.00

VK8 (Northern Territory) is part of the VK5 Division and relays broadcasts from VK5 as shown (received on 14 or 28 MHz).
Note: all times are local. All frequencies MHz.

WIA NEWS

Bill Roper VK3ARZ, General Manager & Secretary

CUSTOMS BYLAW EXEMPTION FOR AMATEUR TRANSCEIVERS

During 1984 problems arose with transceivers imported for amateur usage being modified and used on non-amateur radio allocations, particularly by some members of the yachting fraternity. Some Australian manufacturers of commercial HF transceivers expressed their concern and the full tariff, at that time 30%, was then applied to all transceivers imported into Australia.

Naturally enough, Australian radio amateurs were perturbed over the increase in cost of new transceivers and the WIA asked that the matter be reviewed. As a result of discussions, the Department of Customs then agreed to a reversion to the 2% duty rate for amateur radio transmitting equipment provided some assurance could be given that the equipment would not be modified and placed on commercial frequencies. The then Department of Communications provided considerable support for the proposal.

The WIA accepted responsibility for inspecting and certifying transmitters and transceivers on the basis of whether or not they could be easily modified to operate on non-amateur allocations. The Technical Equipment Advisory Committee, more commonly known as TEAC, was formed, consisting of technically qualified people, the identity of whom remained anonymous for obvious reasons. The certificates issued by the WIA, on the recommendation of TEAC, allow an importer to bring into Australia specified brands and model numbers under the lower tariff.

This certification scheme has worked well, and 154 certificates have been issued to-date. In a number of cases the WIA has been actively involved with the importers in designing acceptable modifications to transceivers to enable by-law exemption certificates to be issued.

However, the rising complexity and cost of modern amateur radio transceivers has meant that a greater cost is involved in the examination process which preceeds certification or rejection of the unit. There have been unavoidable delays while this process is prosecuted which has resulted in financial penalties to the importers. Further, some controversy has arisen over the comparative effort required to modify some transceivers.

It must be accepted that any transceiver or transmitter can be modified to transmit on frequencies other than those for which it was intended, given a competent technician and sufficient time, and perhaps a few additional components. The WIA has considered that no equipment should be approved if the cost of having the equipment modified commercially was less than the duty otherwise payable. Of course a low cost can be achieved if no, or negligible, cost is attributed to the hours of effort involved. Also, changes may be made to equipment by the manufacturer subsequent to certification without informing either the importer or the WIA, and these changes may make conversion quite easy. To police this aspect is extremely difficult, even for the WIA.

There is some evidence that the certification of a piece of equipment as "difficult to modify" has created a challenge to some individuals to devise a modification that allows "general coverage" transmission.

For most transceivers the modifications devised are quite involved but for one or two models the conversion can apparently be implemented by the average amateur. This gives rise to suggestions that the WIA has been inconsistent in its rulings. The WIA has made every effort to be even-handed but concedes that, with one or two models, it is possible there may be relatively straightforward methods of defeating the "general coverage" transmission inhibiting circuits which were not foreseen by the examining consultants.

On the 14th June 1988 the WIA lodged a submission with the Australian Customs Service for an easing of the requirements relating to the by-law tariff concession. This submission was supported by DOTC and was based on the premise there is no evidence that significant numbers of new amateur radio transceivers are now being used on commercial frequencies. This is attributed to the modest cost of commercial equipment, a growing awareness of their advantages over amateur radio equipment (higher power, waterproof, etc.), the complexity of modern amateur transceivers, and the provisions of the new Radicommunications Act.

The Australian Customs Service advertised the amended tariff concession order in the Commonwealth of Australia Gazette on 7th December 1988. Subsequently, an Australian manufacturer of transceivers lodged an appeal against the amendment. However, after discussions with the WIA, this firm withdrew their objection and the new tariff concession finally came into effect a week or two ago.

Unfortunately, even though th the requirements existing under the previous tariff concession order, the Australian Customs Service did not connect the new order with the previous order. The upshot of this is that any of the certificates issued by the WIA showing the old order, TC 8530566, will not now be accepted by Customs.

However, anyone wishing to use an old certificate can have it replaced with a new certificate, free of charge, by approaching the Executive Office of the WIA.

GUIDELINES FOR CUSTOMS BYLAW CONCESSION FOR AMATEUR TRANSCEIVERS

The tariff item which relates to the importing of amateur radio transceivers is numbered 8525.20 and is for "Transmission apparatus Incorporating reception apparatus". The present duty rate is 23%, which will be reduced to 21% as from 1st July 1989, and further reduced by 2% each year until it reaches 15% as from 1st July 1992. The previously mentioned concession rate of 2% was removed some time ago.

In its proposal for change, the WIA asked that they be allowed to certify for exemption from duty specific brands and models of transmitters and transceivers as " being manufactured solely for operation in amateur radio frequency allocations and not intended for commercial service." It was argued that this would streamline the procedures and would not result in any decrease of sales of commercial equipment nor increase illegal operation of equipment.

Here now are the guidelines for assessing equipment suitable for approval for Customs bylaw concession:-

1. Equipment which can transmit on frequencies substantially removed from authorized amateur radio frequency allocations by setting a switch or following instructions in the operators manual for insertion or removal of a link or diode or crystal or other small component shall not be approved.

2. Where the instructions for a modification referred to in section 1 are not specific, but are nevertheless obvious, then the equipment shall not be approved.

3. If equipment is intended for operation on frequencies other than those approved for

the Australian Amateur Radio Service then it shall not be approved.

4. Equipment which operates below 30 MHz and which has a transmitter coverage in segments of up to 600 kHz including an approved amateur frequency allocation will generally continue to be acceptable even when the amateur frequency allocation occupies only a small part of that segment.

5. Equipment which operates above 30 MHz may have a transmit capability beyond the allocated amateur frequencies and still be approved. Such extension, while not to be encouraged, may be up to about 2% of the nominal frequency of the adjacent amateur allocation. No equipment shall be approved if it does not comply with section 1 of these guidelines.

6. It shall not be necessary for all equipments to be inspected, but in cases where there is concern, the WIA may call for a particular piece of equipment to be presented for detailed inspection and testing.

7. Equipment which does not meet the technical requirements specified by the licencing authority for the Australian Amateur Radio Service shall not be approved.

8. A minimum requirement for approval is the lodgement of the following with the Executive Office of the WIA at the time of application for a certificate.

(i) A copy of the owners manual and any other documentation normally supplied with the equipment to the purchaser.

(ii) A signed original statement from the manufacturer or his local agent certifying that the equipment is intended for use in the Australian Amateur Radio Service only and is not intended to be operated on any other frequency allocation.

(iii) Supporting evidence which should include one or more of the following:

(a) a copy of the manufacturer's advertising literature, giving model number, some specifications and stating the class of service the equipment is intended for; and

(b) a recent advertisement giving model number and some specifications and stating the class of service the equipment is intended for.

9. The WIA may call for additional information in cases when it is necessary to resolve any doubts about the equipment.

10. No restrictions will be placed on receiver coverage.

11. The onus for ensuring that equipment complies with the relevant regulations of the licencing authority lies with the owner and or the operator of the equipment and is not the responsibility of the WIA.

12. Where one importer has been issued with a certificate in respect of a particular piece of equipment a separate certificate shall be required for another importer who wishes to import the same equipment and applies for a certificate. It will be necessary for the WIA to ascertain that it is the same model number and does not differ from the other equipment or, if it is different, that it meets the guidelines necessary for the issue of a certificate. Thus it will be necessary to treat such an application as a new application.

13. When a transmitter or transceiver is found to require modifications to meet the preceding requirements for approval the importer shall provide to the WIA a written undertaking that unmodified equipment shall not be sold unless the full duty has been paid.

14. When a transmitter or transceiver is found to require modifications to meet the preceding requirements for approval the importer will usually be required to submit a sample unit with modifications to the WIA for examination before a certificate will be issued.

15. Whenever a transmitter or transceiver is found to be unsuitable for certification the WIA will endeavour to suggest detailed modifications that will make the unit acceptable. However this will not always be possible. In all cases it is the joint responsibility of the manufacturer and importer to determine whether or not any modification will be made and the detailed nature of the modification. It would be prudent to discuss any proposed modification with the WIA to establish whether it would be accepted as sufficiently effective to allow approval for a certificate.

CUSTOMS BYLAW EXEMPTION AND THE INDIVIDUAL AMATEUR

If you have read this far about Customs bylaw exemption, you are probably wondering what it all means as far as you are concerned. And what is the situation if you intend travelling overseas and want to bring back a transceiver for your own use?

Basically, this Customs bylaw exemption means that, if you are going to buy your new rig from one of the many importers of amateur radio equipment into Australia, you will pay much less money for it if the transceiver complies with the Customs bylaw exemption guidelines.

The standard fee for inspection of documents, and/or the transceiver itself, is $155.00. If you are an importer who intends to bring in a bulk supply of the particular transceiver, then that is an insignificant fee to pay. Also, for a commercial importer, the procedures in bringing in the first unit for examination and certification are worth the trouble because of the eventual gains.

However, it is a different story, for instance, when the individual amateur is travelling overseas and wants to bring back a transceiver for his own use.

As detailed in Customs bylaw exemption Guideline No. 12, certification of a particular transceiver for one importer does not mean that a certificate is automatically issued for the same transceiver to be imported by someone else.

The normal procedure for the individual amateur importing a transceiver is for him to pay the duty on bringing the unit into Australia, submit it to the WIA for certification and, if the certificate is issued, then apply to the Australian Customs Service for a refund of the import duty paid.

The difficulties for the individual amateur do not end there. For example, I am told, an application for a refund of duty can take several months to be processed. Then there is the question of whether the $155.00 TEAC certification fee, plus the loss of return on funds of the duty paid before it is refunded, plus the costs of shipping the necessary documents and/or transceiver to the Executive Office in Melbourne for consideration for certification, etc., etc., is a viable option compared to the amount of import duty payable.

When one considers the possible warranty problems in Australia for a transceiver purchased overseas, and the fact that the prices of transceivers in Australia from one of the many commercial importers and retail outlets are very competitive with overseas prices, then it seems that, unless he is buying one of the very pricey, up-market transceivers, the average Australian amateur is far better off buying his new transceiver from one of the many reputable Australian firms.

WORLD TELECOMMUNICATIONS DAY

The International Telecommunications Union, normally known simply as the ITU, was founded in 1865 under the name of the International Telegraph Union, and is the oldest intergovernmental organisation in the world. The ITU became a specialised agency of the United Nations in 1947, and currently has a membership of 166 countries.

Each year, on the 17th May, the ITU celebrates World Telecommunication Day. The 1989 21st ITU World Telecommunication Day theme is "International Co-operation". It is aimed at underlining the necessity for

the world telecommunications community to enlarge the scope of international co-operation to meet the challenges of tomorrow. It seems to me that theme is very applicable to that most democratic of all leisure time activities, amateur radio.

As is usual each year, the WIA has applied to DOTC for permission for each Division of the WIA to put a station to air on 17th May using the suffix "ITU".

MAGAZINE DELIVERY

In the WIA NEWS column of February 1989 issue of Amateur Radio, I explained the changes in delivery times for our magazine. However, it seems that either a number of members did not read that column, or that old habits die hard. Each month the Executive Office still receives telephone calls from members, many in the first 2 or 3 days of the month, complaining that they have not received their copy of Amateur Radio.

So bear with me while I explain the current situation again.

In recent years members became used to Amateur Radio being delivered to their letter box on, or very close to, the 1st day of each month. However, one of the by-products of the new production methods which, among other things, have resulted in the substantially reduced lead times for copy (and isn't that great for HAMADS), is that typesetting and printing are now tied to days of the week, and not days of the month.

Amateur Radio is delivered to the mailing house, Polk Mailing Company Pty. Ltd., on the last Friday of each month. This means that, depending on the vagaries of Australia Post, members should receive their magazine sometime during the following week.

Of course, that assumes that Australia Post delivers on time!

As I explained in WIA NEWS in the March issue of Amateur Radio, your magazine is sent through the postal system as a "Category B" item, which effectively means second class mail.

In recent months, there have been many instances reported, from all over Australia, of Amateur Radio taking up to 3 and 4 weeks to be delivered.

If you know that your membership of the WIA is current, and you have not received your current copy of Amateur Radio within a reasonable time, then it may well pay you to check with your local post office before putting yourself to the expense of contacting the Executive Office.

MEMBERS SURVEY

In the WIA NEWS column in March 1989 issue of Amateur Radio I reported on the interim results collated from the members survey that was included in the October 1988 issue of Amateur Radio. All of the surveys have finally been processed, and the last of the letters have now been sent off to those members who went to the trouble to attach additional comments to their returned survey forms.

Detailed results of the survey will be submitted to the Federal Council (who commissioned the survey in the first place) at the 1989 Federal Convention.

As is not surprising, the final results of the survey are virtually identical to the interim results. However, one result that I did not mention in March WIA NEWS was the number of additional people who read this magazine, apart from members.

Extrapolation of the survey results show that another 3200 people read members copies of Amateur Radio each month. If you add in the people who read the magazines that are sent to radio clubs and libraries, then it seems reasonable to assume that in excess of 12,000 people read Amateur Radio each month.

1989 FEDERAL CONVENTION

The annual Federal Conventions of the WIA are a very important event on the Australian amateur radio calendar. Many of the reports and agenda items for the 1989 Convention were published in the April Issue of Amateur Radio for the information of WIA members. Those few agenda items that were received too late to be included in April Amateur Radio were included in the Federal News tapes played on Divisional news broadcasts on 16th April 1989.

During the next few weeks, many of the results of this important Convention will be reported in the weekly Divisional news broadcasts.

A tremendous amount of rushed work was carried out to bring to members the stop press report of the Convention, published elsewhere in this issue of Amateur Radio, without delaying the normal production schedule of Amateur Radio.

One of the key figures was the new Amateur Radio photographer, John Friend, VK3ZAB. John, who has just completed a very successful exhibition of some of his excellent work at the Waverley City Gallery, will be continuing to assist the Publications Committee in the future.

Incidentally, an interesting innovation at this Federal Convention, was the video taping of the highlights of the Convention by Doug White, VK3BOW. ATVers in Melbourne need no introduction to Doug, and his superb camera skills. A brief, edited version of the videotape will be made available in due course through the Federal Videotape Co-ordinator, John Ingham, VK5KG.

IPS PREDICTION REPORTS

As members will have noted, Amateur Radio has not regularly published IPS predictions for some time.

Frank Hine, VK2QL, assisted Amateur Radio for a long time with his predictions reporting but, unfortunately, because of health reasons, Frank is unable to continue.

Perhaps, in the past it could be argued that the lack of IPS predictions did not really matter so much because of the general lack of interest in DX during the years of sunspot minima.

However, the DX bands are now alive, and Amateur Radio does need to publish IPS predictions for the benefit of members.

But who can do it for us?

If you have the interest, and the skills, and would like to be a part of the team that makes Amateur Radio such a successful magazine, I would very much like to hear from you.

EXECUTIVE OFFICE STAFF

Are you recently retired?

Live in Melbourne?

Have administrative/financial/keyboarding skills?

Looking for something worthwhile to do?

Interested in being part of a dynamic team working for the future of amateur radio in Australia?

If so, the WIA needs you. And needs you now!

The Executive Office is looking for volunteers, part-time employees, or full time staff.

We can guarantee you a challenging, exciting time, working in an exhilarating atmosphere.

If you are interested, you can find out full details by contacting me, Bill Roper, VK3ARZ, on 528 5962 during office hours, or on 584 9512 after hours.

EXECUTIVE OFFICE OFFICE

And while I am appealing for more assistance in the Executive Office, I might as well mention that the Executive of the WIA are looking around for new office premises.

Our requirements are quite modest, as is the rent that we are able to pay. We do not need a high profile, store front office, because we are strictly an administrative operation, but we do need the premises to be located in the mid-eastern or mid-southeastern suburbs of Melbourne, and to have reasonable car parking facilities.

If you are able to assist in any way, please contact me, Bill Roper, VK3ARZ, on 528 5962 during office hours, or on 584 9512 after hours.

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Scandinavia On Six

by Harry Atkinson VK6WZ
5/97 Railway Parade
Mount Lawley 6050

The unheard of — but long sought after opening between VK6 and Scandinavia happened on Saturday, February 25.

Wayne Dowie, VK6WD, almost doubted his own ears when he heard his callsign from Norway late on that memorable afternoon.

The search for Europe on six metres began, for Wayne, when a friend, Tony Mann, an avid TV DX-er gave 6WD a listing of overseas TV sound and vision channels. Armed with this and his twenty years or so of keen devotion to VHF DX Wayne has spent many hours in this and earlier sunspot cycles checking on 50 MHz propagation.

Wayne said. "Tony, just back from the USA, rang me at about ten to four local time to say he was copying sound from Norway television here in Perth."

According to Tony's list it has a particularly odd offset ... 48.252 to 48.565 ... it's in Melhuf ... and runs 100 kW. That was audible along with a number of others from the Norway area but, making it a little difficult, there was also sound on 48.250 pouring in from Malaysia. I alerted a few people on our 2 metre chit–chat channel for VHF DX.

"I also put out a call on 28.885 to let anyone hearing it in Europe know that there was propagation between there and VK6. I didn't get a reply but that wasn't surprising; a lot of people act rather than chat. So then I called on one, one, oh (50.110 MHz) and while I was talking to a couple of the locals I heard LA3EQ come back. It was absolutely staggering. He was about 5 and 3. Then the melee started – everyone wanted to get into the act! The result however was that I was the first one to actually get a report from him and get him to understand my callsign ... and we exchanged 5 and 3 reports both ways. Others were waiting so I didn't stay to exchange pleasantries and I left the frequency. Others involved included VK6 HK.

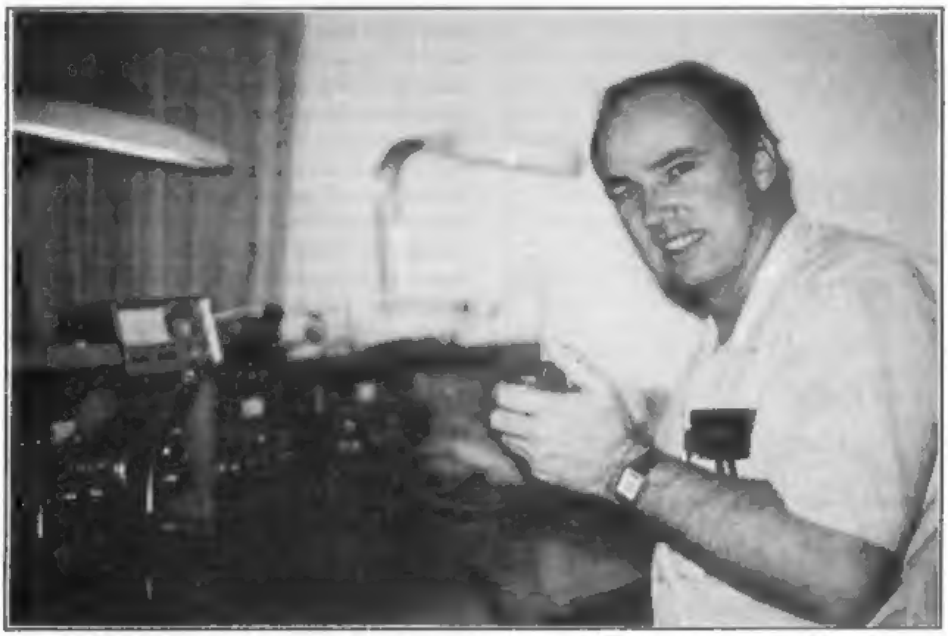
—I think he was second in line ... then VK6YU tried but just at the crucial moment he had antenna trouble... also there was VK6RO. I did notice, though, that the fellows in the southern suburbs of Perth – 6RO, 6KZ and 6YU – seemed to lose the LA signals pretty quickly so, within a couple of minutes, I'd say, ceased to hear them".

Reading from his log, 6WD listed the following stations:

LA3EQ (0811Z), on 50.110; LA8WF (0842Z) again 50.110; LA9UX (0846Z) also 50.110. The latter was also worked on cw at 0852. At 0920 Wayne worked SM 6PU although this was not 6 metres two–way as the Swedes do not have transmitting privileges on 50 MHz and the QSO was conducted with VK6WD on six metres and SM6PU on ten metres. Also working the above stations were Don, VK6HK, Peter VK6KXW, Phil VK6ZKO and – hearing the DX but not quite making it – VK6ZSY, VK6KZ, VK6YU and VK6RO. Also according to Wayne's log, Peter, 6KXW worked a couple of Scandinavians he (Wayne) missed. These were LA6LCX and OH1TP. In addition, Peter worked all the stations Wayne worked and in the case of SM6PU, again the contact was cross-band 6m – 10m.

Wayne told me the opening was via short parth to Europe with his beam heading approximately 330° and the probable cause of the propagation extended F–2 reflection. It's interesting to note that the 1987 ARRL Handbook section on propagation says the MUF may reach as high as 70 MHz but only "during the peak years of the sunspot cycle, making 6 metres the only useful VHF band for this type of communications." The Handbook continues: "The MUF may exceed 50 MHz during a three year period around the peak of the 11 year sunspot maximum. The last solar peak was in 1980 and the next maximum is predicted for 1991."

Well, judging by the February–March happenings over here on the west coast, it certainly seems we're in that three year period! Wayne doesn't claim his Scandinavian QSO's represent a new distance record for 50 MHz but thinks they are a first for VK6 operators into Europe. "The trouble with six metres is that it's very hard to work significantly east or west of north; that same day (February 25) the JA's were coming into Perth 60 dB over S–9 ... with powers in some instances of only ten watts!" To extend DX beyond VK2AGZ's record 16,653 km (April 1981) when he worked into Canada, would require VK6 operators to aim their beams long path to areas somewhat east or west of a path directly over the south or north pole, Wayne believes.



The smile of success! VK6WD at his operating position. Photo: Ann Dowie.

He says when conditions are good on six metres it's relatively easy for operators in all parts of the world to work north and south. Backing up this opinion is Peter VK6KXW who said that after the Scandinavian signals petered out in Perth, it was learnt that VS6 and JA stations were having a ball with G and PA0. Peter also reported that VK6 stations were unable to raise any Europeans on March 1 but two Alice Springs operators (VK8's ZMA and ZLX) worked into OH. No six–metre DX was worked on March 2 but TV signals on 48.250 and 48.260, thought to be Europeans, were logged by Tony Mann.

Both Wayne and Peter are confident that some day soon, 6 metre contacts between VK6 and G land will be made and if by long path, over New Zealand they'll certainly give that distance record a hefty nudge! Already, Wayne says, UK operators have heard Australian TV on long path between 2000 and 2300Z and some have reported hearing our 10–metre beacons. There's a feeling abroad that Cycle 22 hasn't yet exhausted its store of VHF surprises.

Footnote

Since this article was written further details have come in via 28 MHz. Wayne learnt that his first contact (LA3EQ was made with the Norwegian using something less than 20 watts power.

Even more surprising was the later contact with LA8WF who said his power was around 5 watts! At the time VK6WD was using an IC551 driving a home–brew solid state linear at 100 watts to a 6 element yagi up 13 metres.

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Review of SAPS

Gil Sones VK3AUI
Technical Editor

SAPS stands for Stand Alone Prediction System and it is a computer program which will provide Ionospheric Predictions for anywhere in the world. It also assists professional users with selection of frequencies and antennae.

The GRAFEX presentation which we are all familiar with is but one of the predictions which can be made. It caters for terminals anywhere in the world. A large number of terminals and paths are inbuilt but you can enter the coordinates for anywhere you choose.

Beam headings are provided for both ends of the circuit. Distance is also computed. These are in themselves very useful pieces of information.

The program comes on seven 360 KB 5.25 inch floppy diskettes for an IBM PC XT/AT or compatible computer. You can run the program on a dual floppy disk system but a hard disk makes life so much easier. To run on a twin floppy system using 360KB drives the seven distribution disks swell to fourteen working disks. If you have 1.2MB floppies then only three working disks are needed. On a hard disk the program and data will use up around 2.4 MB.

Memory requirement is aimed at an EGA or VGA colour display but is compatible with CGA and Hercules Graphics. There was a bug with CGA but is is being sorted out. So ask if this is a problem when you order your copy. I would recommend EGA for the display it provides.

Finally in view of the amount of calculation involved in producing predictions a faster system than the bog standard XT is desirable. Turbo is very well worthwhile as is one of the speedup cards with an 80286 or similar. The system is not too tardy even on the basic XT. Just be a little patient.

This review was conducted on an XT type of machine with 640K of RAM, 360K floppy disk drive, Turbo, Hard disk, and EGA. A fairly standard sort of setup if there is any such thing in the world of personal computers.

Skill level for the operator is fairly minimal with relatively frequent reference to the manual for any thing other than the normal DOS operations. The machine does not bite and the reset solves the more sophisticated SNAFUs.

Installation is pretty simple. A readme file provides installation instructions. Just place the first disk in the "A" drive and type "Install" and then press enter (return) and follow the instructions on the screen. The install program sets up the directories on the hard disk and copies the files into them. You are prompted to insert the disks in turn in the "A" drive as required. A very simple procedure for anyone even a rank beginner.

Once installed you must get into the directory containing "SAPS" and then you type "SAPS" press return and you are on the way to producing your own Ionospheric Predictions. To do this is where you minimal knowledge of DOS is required. You have to know how to change directories. Pretty simple if you have any other packages running already

Now you only have to follow the instructions which are mostly onscreen. The manual helps out too and it is wise to read it first. The reviewer followed the old path of only reading the manual when all else fails. A set or predictions was produced with only a relatively small number of backtracks and blind alleys being traversed.

Following the onscreen menu you can enter additional terminals such as all the rare DX countries. You will need to know their latitude and longitude to do this. Then you can enter as circuits the paths from your home to them. This will make generating your own set of predictions much easier. The list included with the program does have some interesting paths but they might not be your favourite DX.

One interesting thing is the ability to enter details of your antenna. Very interesting to see what effect various takeoff angles have.

Amateur bands can be entered as a frequency set and the program will predict which bands to use for a particular DX spot at a given time on a given day. Here there may be some hidden surprises which may be of interest in a contest or if there is a DXpedition to a rare country.

Predictions can be saved on disk and can be printed out when required. For amateur work though the on screen display should be adequate for most occasions.

The data covers the time period from 1938 to 1990. This is made up of a combination of historical data and predicted data. Updates are available and are published in the monthly "Solar Geophysical Summary" which is published by the IPS.

The reviewer is rather interested in six meter propagation and it was interesting to do predictions for some past DX openings. The program only extends to 40 MHz in predictions but there was a strong indication of a high MUF when six metre DX had been worked. The aim of this program is to make predictions for normal propagation and for much amateur operation it is openings which are well below the probability of this which provide the exciting DX. The predictions do provide a pointer to such conditions which may well be in existence on less than 10% of days.

A very interesting program which provides a lot of information for the user.

The price is very reasonable at $250 for the set of disks especially when you compare it to the price of some public domain and shareware disks or to some of the very popular databases, spreadsheets, and word processors.

The SAPS program is available from:-
IPS Radio and Space Services
Department of Administrative Services
PO Box 702
Darlinghurst NSW 2010
The cost of the package is $250.

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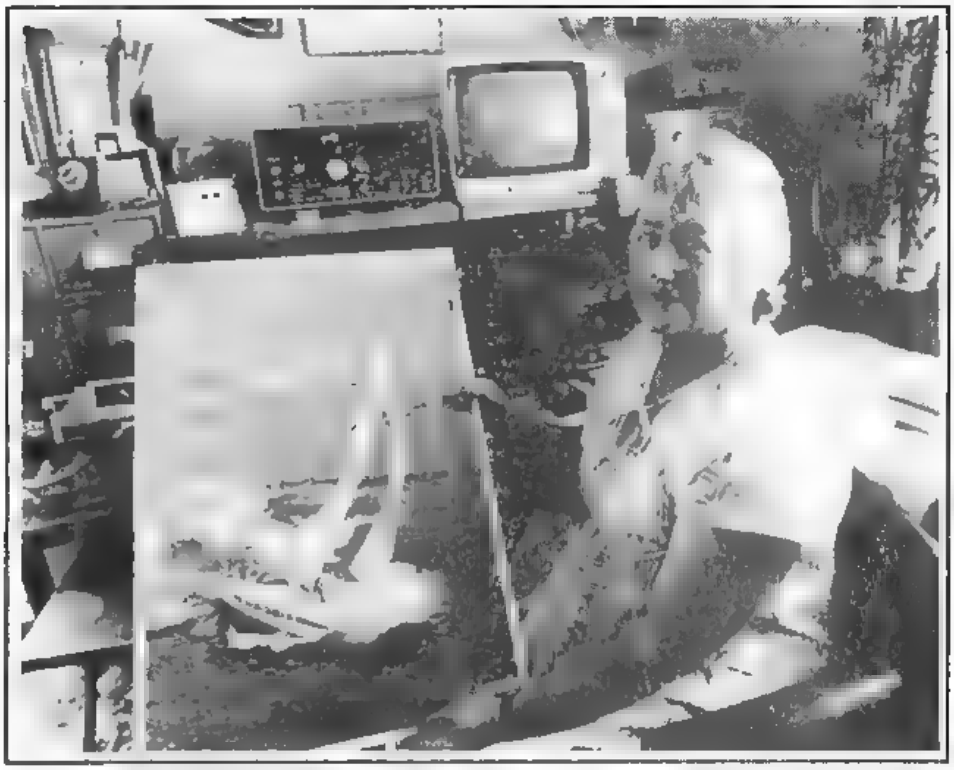
MIR Goes QRT

The Soviet space station MIR which had seen the amateur radio activation by cosmonauts has become an unmanned craft for the first time in more than two years, according to a report from Moscow.

The official news agency Tass said the three member crew were to return to earth on April 27, and the craft would be unmanned.

The report made no mention of two replacement crew members for the space station who had previously been scheduled for launch on April 19.



Joan Beevers VK3BJB shows a picture of one of the Japanese yachts she has worked on the All Japanese Maritime Mobile Net. (Photo by Don Turvey, Mildura).

Mrs Joan the Lighthouse

Contributed by
Jim Linton
VK3PC

Taking up the challenge to learn the Japanese language has changed the life of housewife Joan Beevers VK3BJB of Mildura in north-western Victoria.

Having learnt the language on the amateur bands Joan now describes herself as being fairly fluent in conversational Japanese.

Her original intention was to learn just enough Japanese for what she calls a "rubber stamp" QSO with JA stations. But Joan found so many willing teachers on air her vocabulary soon grew.

Some five years later she has become so good that the wineries in Victoria'a Sunraysia district call on her to help when visiting Japanese wine buyers have difficulty in making themselves understood.

On the amateur bands she gives so many JA stations who can't speak English at all their very first QSO with a DX station.

She can also read and write simple elementary school Japanese enabling her to exchange letters and QSL cards direct with those who can't write English.

The next challenge for the mother of two and XYL of Ray VK3BRB is to learn the 1,850 standard Kanji characters so she can read Japanese newspapers and magazines.

During the afternoons Joan monitors the All Japanese Maritime Mobile Net on the 21 MHz band. Japanese sailors taking part in competition races or on pleasure trips in the Pacific and Indian Oceans check-in reporting their positions.

The net with the Japanese name of Okera has being going for more than 15 years. On occasions VK3BJB is net controller or "key station".

To many of those on the net she is affectionately known as "Mrs Joan". She became a temporary net controller in June 1988, gaining the dual distinction to being the first ever foreign radio amateur to check into the net and the first YL net controller.

"They call me their lighthouse because I can relay their position to friends and generally help them out," Joan said.

The net keeps track of craft and provides weather reports, and on occasions takes part in sea rescue and search operations

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Signals Reflected Via Aircraft

by Gordon McDonald VK2ZAB
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A Wideview View

In his article "Aircraft Enhancement Another View" (AR March 89) Ian Cowan VK1BG clearly explains that although he accepts the fact that VHF and UHF signals propagate beyond the horizon via reflections from aircraft he thinks that there is another propagation medium operating at the same time. His erudite theory contends that the heat generated by large jet aircraft in flight gives rise to a mini-inversion which in turn enables beyond the horizon propagation also.

Let's keep this idea in mind whilst we consider another aspect of reflections from aircraft which has received little attention up until now:

Slant Range

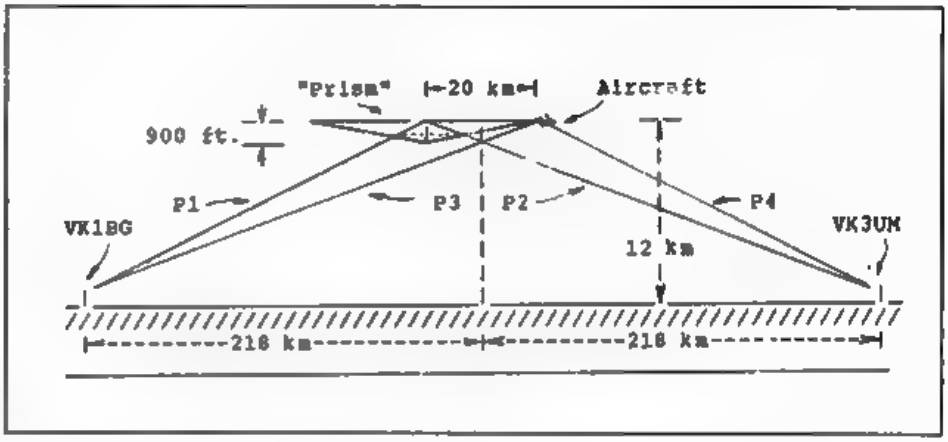
It is thought that the path length does not change during forward scatter contacts via aircraft reflections and that this is evidenced by the lack of Doppler shift, but this isn't quite true. It would be true only if the aircraft track exactly coincided with the line of sight path all the way from transmitter to receiver which is impossible in practice. The lack of noticeable Doppler is simply due to the fact that the range doesn't change by much.

To understand the significance of this we will examine the accompanying diagram. It represents a simplified profile of the VK1BG to VK3UM path complete with a Boeing 747 flying at about 39,000 feet trailing a VK1BG "prism" which is dutifully refracting the signal towards VK3UM at the same time as the aircraft is doing its bit by reflecting it. We take the distance between the two stations to be 436 km.

We note that the length of the signal path from VK1BG to VK3UM is equal to P1 + P2 via the refracting centre trailing the aircraft by 20 km and also P3 + P4 via reflection from the aircraft proper Let's work out what these distances are. We will start with the aircraft and the prism centre equally spaced about the middle of the path as in the diagram and round the height off to an even 12km.

P1 + P2 = $\sqrt{(208^2 + 12^2)} + \sqrt{(228^2 + 12^2)}$
= 436.66144 km

P3 + P4 = $\sqrt{(228^2 + 12^2)} + \sqrt{(208^2 + 12^2)}$
= 436.66144 km



We observe that the two paths are equal in length. However the aircraft is travelling at 870 km per hour so what is the situation when it has moved say 2 km closer to Melbourne and VK3UM? Let's see:

P1 +P2 = $\sqrt{(210^2 + 12^2)} + \sqrt{(226^2 + 12^2)}$
= 436.66094 km

P3 + P4 = $\sqrt{(230^2 + 12^2)} + \sqrt{(206^2 + 12^2)}$
= 436.66205 km

We see that the paths now differ in length by 0.00111 km or 1.11 metres. Using the same method let's calculate the path differences for 2km increments in aircraft position for say 22km. The results are given in the accompanying table:

Aircraft position.	Path difference.
Start position	0.00 m
+ 2 km	1.11 m
+ 4 km	2.22 m
+ 6 km	3.34 m
+ 8 km	4.45 m
+ 10 km	5.58 m
+ 12 km	6.71 m
+ 14 km	7.85 m
+ 16 km	8.99 m
+ 18 km	10.14 m
+ 20 km	11.30 m
+ 22 km	12.48 m

We observe that the paths differ by increasing amounts as the aircraft heads towards VK3UM. If we wished we could work out that close to the point of descent into Melbourne the path difference would be several kilometres. We would also find that on Canberra side of our centre point start the paths differ in length in the same way as on the Melbourne side.

What bearing has all this got on the VK1BG theory? Let's see:

Interference And Phase

When a signal from a single transmitter is received via two (or more) paths the resultant signal is determined by the amplitudes and phase relationships of its component signals. We observe from the table that over 22 km the path length difference changed by 12.48 metres. This happens in about 91 seconds at 870 km/h.

Therefore a 432 MHz signal from VK3UM to VK1BG or vice versa will reinforce and cancel 36 times (every half wave length) or about every 2.5 seconds during this 22 km stretch of the aircraft's flight. It will get faster and faster as the aircraft gets nearer Melbourne!.

In other words the two path system will result in continuous "flutter" on the received signal. It should also be noted that changing the simplified dimensions that I used from the diagram won't change this simple fact. Furthermore any instability in that 20 km distance from the aircraft to the refraction centre in the "prism" will make things worse.

However if you use aircraft reflections you know that there is really no problem with continuous flutter throughout your contacts simply because it DOES NOT HAPPEN IN PRACTICE!

Now let's have another look at that VK1BG theory:

Another View?

VK1BG suggests that there are two (at least) means by which an aircraft enables beyond the horizon propagation at VHF and UHF but as we have demonstrated above this will result in continuous flutter throughout the entire contact and as we all know this does not happen in practice. The fact that the signals lack aircraft flutter clearly means that there is only one propagation path! Something's wrong here!

There is no doubt that signals are reflected off the aircraft proper, not even VK1BG disputes that, so where does this leave us?

Obviously there is only one answer: THE PROPAGATION PATH ENVISAGED BY VK1BG DOES NOT EXIST!

Instead of showing, as he says, that such a system does exist VK1BG has shown us that it is possible to put together a seemingly plausible sounding story to suggest that it MIGHT. He does not provide us with any reason for embarking on this line of speculation in the first place other than that he thinks my calculations (relating to signal strength) don't fit his observations and no evidence that he is cognisant with any of the considerable amount of published data relating to reflection of radio signals by aircraft extending back to early 1930s.

In short, he is asking us to believe in the existence of a propagation mechanism which countless experts have failed to detect, predict or even speculate upon during nearly 60 years (30 since the start of the big jet era) of observations in this specific area. I don't think his argument is that good. Do you?

Reflections From Aircraft

Reflection of radio signals by objects on the path between the transmitter and receiver is not new. It was noted in the early 1920s and was demonstrated as a method of detecting ships in 1922. Equipment specifically set up for this purpose was known as "wave interference" gear.

In the late 1930s radar systems were invented which used receivers and transmitters located at the same site so it became necessary to differentiate between them and the old wave interference gear which had the transmitters and receivers at different sites. Thus the terms "monostatic" for one site radars and "bistatic" for two (or more) site radars were born.

The system we use to communicate beyond the horizon by reflecting signals off aircraft is simple bistatic radar.

Bistatic Radar

Bistatic radar has characteristics which are quite different from those of monostatic radar and they are covered in detail in several text books and papers on the subject. These characteristics have a considerable bearing on our debate about aircraft reflections.

Therefore it should be mandatory for anyone thinking about punishing our credibility with their theories to make themselves familiar with the available information about bistatic radar before doing so.

One excellent source of information on the subject is "Introduction to Radar Systems" by Merril I Skolnik. It is available in a paperback edition for students.

Anyone who wishes to argue with me that the signals we see are not due to reflections from the aircraft proper had better have read Skolnik or some similar text first otherwise he will find me "forthright" in my views. I have better things to do.

Conclusion

VK1BG's theory has some parts which sound good but as every radioman worthy of the name knows you can't have two signal paths without interference and as there is no evidence of this the theory breaks down. ie: It's Wrong.

VK1BG is right about about one thing when he says that we will still be able to have "Aircraft Enhancement" contacts when aircraft are non metallic because to quote Skolnik:

"Another interesting property of forward scatter is that an absorbing body and a reflecting body of identical shape have the same forward scatter cross sections, but the backscattered energy from an absorbing body will be much less than that from a reflecting body. This follows from the application of Babinet's principle." (Babinet's principle is a law of optics).

Appendix

(1.) Multipath is sometimes seen near the beginning and end of contacts via aircraft reflections due to one of two possible mechanisms. The first is that some stations can hear the other weakly before the aircraft is in mutual view so that when it first appears (or is about to disappear) there is interference between the direct (tropo scatter) signal and the aircraft reflected one. This appears when the reflected signal assumes massive predominance due to the aircraft being in clear view of both stations.

The second is due to the interferometer effect known to satellite users and moon bouncers and is due to reflections from the earth when the signal source is near the horizon. This is only evident over the sea or flat terrain so is not likely to obtain on the Canberra-Melbourne path.

(2) Incidentally the advent of military aircraft with small radar cross sections may result in a resurgence of interest in bistatic radar since it may provide a more efficient means of detecting them than that afforded by monostatic radar.

(3) There is still a lot to be learnt about contacts via aircraft reflections. How can we estimate an aircraft's effective (Bistatic) reflecting area which seems to be greater than we first thought for example. This information would enable us to estimate in turn just how much power and aerial gain we would require in order to make the first contact between say Sydney and Melbourne on 1296 MHz using this mode. However we are not likely to find out about such things as soon as we might if we hadn't gone off on flights of fancy like that provided by the VK1BG theory.

Amateur radio lore already has its fair share of myths, furphys, half truths and plain nonsense without adding more

Analysis of the Z match antenna tuner

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Panorama, 5041

Because of its simplicity, the Z match antenna tuner is popular with many radio amateurs; but why does such a simple circuit work? Here are some ideas on how it can match a range of load conditions.

This article all started because Dean Probert VK5LB, built a Z match tuner and decided to submit an article on its construction for publication. He invited me to support his submission with some background theory on the Z match and, following some degree of investigation, this article is the result. The tuner is briefly described in the RSGB Handbook but its principle of operation is left much to the imagination.

Other references on the Z match are also not too helpful in this regard. Whilst the circuit is simple in terms of the components used, understanding how it works is certainly not in the simple category. In the following paragraphs I will describe how I believe it functions assuming the circuit specification given in the RSGB Handbook.

Circuit Analysis

Details of the original circuit is shown in Figure 1. The addition of a switch across C2a, not in the original circuit, will be explained later. A separate output coupling transformer (L1, L2) is used on the high frequency bands (14,21 and 28 MHz) from that (L3, L4) used on the low frequency bands (3.5 and 7 MHz). From the coil dimensions given, the winding inductances were initially calculated to be as follows :

L1 = 1.84 uH
L2 = 2.4uH
L3 = 4.4 uH
L4 = 3.1 uH

The minimum values of the tuning capacitors are not given but minimum values have been assumed to be one tenth of the maximum values so that the capacitance ranges are as follows :

C1 = 50 to 500 pF
C2 = 2 x 25 to 250 pF

From the inductance and capacitance constants given above, the reactance of the relevant circuit elements have been calculated for each of the frequency bands. The equivalent circuits for 3.5 and 7 MHz, showing these reactive components, are given in Figure 2. The same for 14, 21 and 28 MHz are given in Figure 3.

The circuits make use of a matching principle shown in Figure 4 in which a specific combination of series capacitive reactance (Xc) and shunt inductive reactance (X1) can be made to match a resistive load (Ra) to a lower resistance source (Rs). In this type of circuit, the values of X1 and Xc are calculated as follows :

$$X1 = \sqrt{\left(\frac{Rs.Ra^2}{Ra-Rs}\right)}$$

$$Xc = \frac{X1.Ra^2}{Ra^2 + X1^2}$$

The values for Rs equals 50 ohms are plotted in Figure 4. In the Z match circuit, Xc is provided by variable capacitor C1. For 3.5 and 7 MHz, X1 is provided by partial tuning of the shunt inductance at L3 and for 14, 21 and 28 MHz, X1 is provided by partial tuning of the shunt inductance at L1.

One feature of the Z match circuit is that there are no variable inductors. One might now question how we get the variable inductors in the network shown in Figure 4. To explain this, refer to Figure 5. In 5a, we have our inductor paralleled by tuning capacitor C2a. Depending on the applied voltage and the reactance of L, a current will flow through L. A current will also flow through C2a, depending on the applied voltage and the reactance of C2a, but in antiphase to that through L. Current through C2a cancels current through L so that as we increase capacitance, we increase the combined inductive reactance of the circuit. Providing the capacitance is less than that which gives resonance with L, it provides a means of adjusting inductance of the circuit.

The series circuit of Figure 5b, can also be used to adjust inductance. The voltage developed across C is in anti-phase to that across L and an increase in the reactance of C2b causes a reduction in the inductance of the combined series circuit. Providing the capacitance is greater than that required for series resonance, it provides a means of adjusting the inductance of the circuit.

In the various frequency band circuits shown in Figure 2 and 3, variable capacitor C2a-C2b can be seen to perform the function of varying the value of shunt inductance by both of the methods discussed above.

The type of matching circuit of Figure 4, is limited to a load resistance (Ra), no less than the reflected to source resistance (Rs) and hence, for Rs = 50 ohms, minimum Ra is 50 ohms. If L1 and L2 were tightly coupled, the unbalanced to balanced circuit formed by split stator capacitor C2 would produce an impedance ratio of 1:4 and the minimum load resistance would be defined as 200 ohms. However, the coils are not tightly coupled and herein lies a reason why the Z match circuit can match a range of load resistances lower than 200 ohms. This characteristic will be discussed later in the article.

If L3 and L4 were tightly coupled, their turns ratio of 1.33:1 would produce an impedance ratio of 1.78:1 and a minimum load impedance of 28 ohms. They also are not tightly coupled.

Load Resistance Range

The first approach to determine the load resistance range of the circuit was made on the assumption that the coils were tightly coupled. Based on a resistive load Ra, the circuit constants appeared to provide matching to an Rs of 50 ohms over the following ranges of output resistance Ra:

3.5 MHz 110 ohms to 9 kohms
7 MHz 1.2 kohms to 2 kohms
13 MHz 200 ohms to 4 kohms
21 MHz 200 ohms to 2 kohms
26 MHz 200 ohms to 1.2 kohms

On 7 MHz the inductance of L3 appeared to be too high making matching difficult for load resistances below 1.2 kohms. However, by shorting out C2b on this band, inductor L1 became prominent and the low resistance end of the range of Ra could be lowered to 30 ohms.

The output resistance range was based on a resistive load and variable capacitor C2 would also have to be adjusted to correct for any reactive component in the antenna load.

To test out the theory, the VK5LB Z match unit was borrowed and tests were carried out with variable resistive loads within the range of 30 to 2000 ohms To do this, a noise bridge, connected at the X match unit input, was set for a balance at 50 ohms. To do this, a noise bridge connected at the Z match unit input, was set for a balance at 50 ohms resistance and a match was attempted over the load resistance range on each of the bands.

The tests confirmed that, as predicted, complete coverage on 7 MHz could only be achieved with C2b shorted out, although there was wider coverage than predicted. On the other hand, the tests showed, not as predicted, that near continuous coverage could be achieved on all other bands over the tested resistance range. The answer to these discrepancies was found in the characteristics of the coupled coils L1, L2 and L3, L4 which will be discussed in the following paragraphs.

The Coupled Coils

To check out the characteristics of the coupled coils, test models of similar dimensions to those specified were assembled. The inductances of these measured fairly close to the previously calculated values and were recorded as follows :

L1 = 1.72 uH
L2 = 2.54 uH
L3 = 3.77 uH
L4 = 3.35 uH

The inductances of L1 and L3 with secondaries short circuited were measured as 1.02 uH and 2.1 uH respectively. From these measurements, the coefficient of coupling for both circuits was calculated to be around 0.65. A few further calculations (refer to appendix) showed that, because of leakage inductance, there was a considerable series inductive component which modified the effective values of shunt resistance and shunt inductive reactance. The effect of this is to reflect a lower value of shunt inductance than that of the open circuit primary winding and much higher value of shunt resistance than that of load resistance Ra. The equivalent circuits of L1, L2 and L3, L4, with inductance values derived from the measurements, are shown in Figure 6.

The measured variation in shunt inductance and shunt resistance at L3 primary, as a function of load resistance across L4 secondary, is shown in Figures 7 and 8, for frequences of 3.5 and 7 MHz respectively. The same for L1 and L2 at 14 MHz is shown in Figure 9. Equipment was not available to record the two highest frequency bands.

The increase in reflected shunt resistance, at the coupled circuit primary windings, has a significant effect on the load resistance range which can be matched, particularly at low values of load resistance This can easily be seen by referring the reflected parallel resistance values on Figure 7, 8 and 9, back to the X axis of the matching circuit curves of Figure 4. Not only values below 50 ohms are tunable but the reactance values of input tuning capacitor C1 are higher resulting in less capacitance required for the low resistance loads. Because of this load resistances as low as 30 ohms can be achieved at 3.5 MHz with the 500 pF value of C1.

Overall, there is less capacitance range required in C1 and the capacitance versus load resistance curve for C1 is humped near the centre with low capacitance at both very high and very low values of load resistance. This is demonstrated in the results of some of the tests carried out on the VK5LB unit (refer Figure 10).

One problem experienced in the VK5LB unit concerned the minimum achievable capacitance of C1. Dean paralleled all sections of a three-gang receiver tuning capacitor for C1 (around 3 x 400 pF). On 21 and 28 MHz, two of the sections had to be disconnected to achieve tuning range on these bands. Even with only one section connected, maximum load resistance tunable on 28 MHz was 300 ohms and a lower capacity would have been needed to match higher values of load resistance.

Balanced Outputs

The two coupling transformers L1, L2 and L3, L4 provide winding isolation so that either balanced or unbalanced transmission lines can be used. However, for the balanced case, transformer L3, L4 is not constructed for good capacitive balance at its output. The unbalance this causes on the transmission line must increase with frequency and the circuit designer probably had this in mind in providing L1 with a pseudo balancing circuit of split stator capacitor C2 for the higher frequency bands. On the lower frequency bands, where transformer L3, L4 is used, the reactance of the unbalanced capacitive component would be greater and of less effect on transmission line balance.

Harmonics

Matching circuits which have series inductance and shunt capacitance are well recognised as low pass filters which attenuate harmonics generated in the transmission. The matching circuit, of the type shown in Figure 4, is not of this type and is of the form of a high pass filter. Notwithstanding this, the parallel combination of C2 and the coupling circuit would appear as a shunt capacitance at the harmonic frequencies and in conjunction with the series inductive components in the output coupling circuits (shown in Figure 6), would provide some degree of attenuation to harmonic frequencies.

Summary

Owing to the careful selection of values of inductance and the degree of coupling in its output circuits, the Z match tuner can match a wide range of load conditions over a range of frequency bands. It has an advantage in using fixed inductors so that tapped and switched inductors, or roller inductors, are not required. Only two tuning capacitors are used but output switching is necessary to switch between high and low band output circuits or to disconnect the unused output when the other is in use.

Using the original circuit, there are difficulties in matching to some load resistance values on 7 MHz This problem is corrected by shorting out capacitor C2b on 7 MHz and an additional switch has been added to the circuit of Figure 1 for this purpose This connection would also be more suitable to operate L3. L4 output circuit on 10 MHz although this band was not specifically checked out in the tests.

The Z match unit appears as a simple tuning device which can be used for a wide range of matching applications without the complication of adjustable or multi-switched inductors. In constructing such a unit, it would seem important to closely follow the coil specifications to achieve suitable values of inductance and coupling coefficients. The interesting thing about the design is that if tightly coupled output coils had been used, such as those bifilar wound on toroidal cores, the range of output load conditions over which matching could be achieved would have been more restricted. This point certainly does not come out in the references examined, and in fact the RSGB Handbook defines the coils as tightly coupled.

In conclusion, it must be again pointed out that analysis was carried out using resistive loads Whilst we would all like our transmission lines to look purely resistive, they are seldom without reactive component which must also be taken into account in adjusting the tuner. Such reactances might well result in quite a different range of tuning conditions to those described for resistive loads.

Appendix

Coupled Circuits - Derivation of Equivalent Circuit (Refer Figure 1a)

Measure primary inductance (Lpri), with secondary open circuit.

Measure secondary inductance (Lsec), with primary open circuit.

Measure primary inductance (Lpsc), with secondary short circuit.

Coefficient of coupling

$$(K) = \sqrt{(1 - \frac{Lsec}{Lpri})}$$

Mutual Inductance (Lm) =
K √(Lpri Lsec)
Lp1 = Lpri Lm
Ls1 Lsec - Lm

ar

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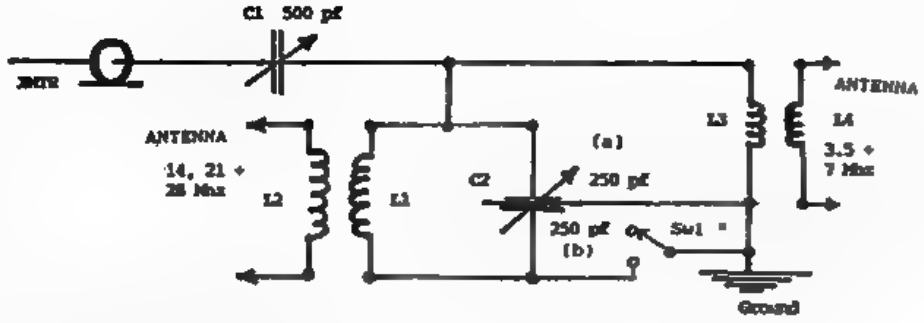
1 RSGB Radio Communication Handbook, Chapter on HF Aerial (Multi-band Couplers

2. KING, Allen W, W1CJL. The Z match Antenna Coupler, QST May 1955

3 VARNEY, Louis, G5RV An Improved Match ASTU, Radio Communication, October 1985

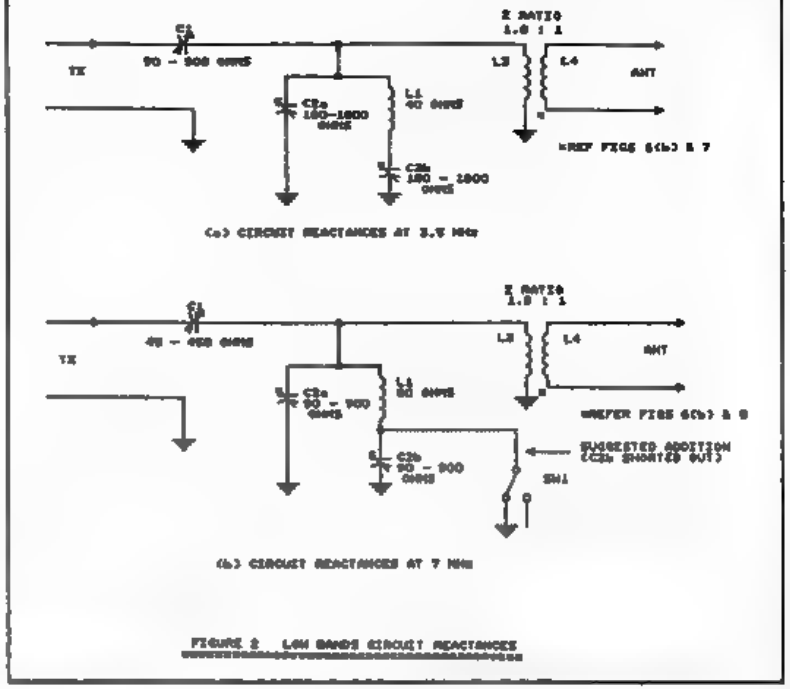
4. GURR, Rob, VK5RG Z Match Antenna Coupling Unit App 2 Wire Antenna, Amateur Radio, September 1984, p.17



L1 and L2 are 5 turns
L3 and L4 are 8 and 4 turns respectively.
L1 and L3 are 2½" diameter.
L2 and L4 are 3" diameter.
All coils have .25" spacing between turns.

* Sw1 - Connect on 7 Mhz

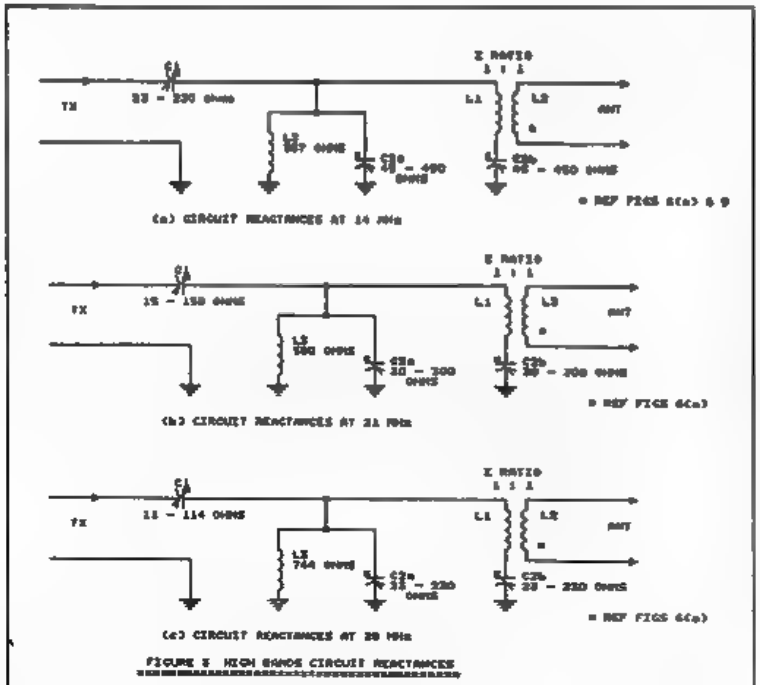
Figure 1 Z MATCH CIRCUIT DIAGRAM



(a) CIRCUIT REACTANCES AT 3.5 Mhz

(b) CIRCUIT REACTANCES AT 7 Mhz

FIGURE 2 LOW BANDS CIRCUIT REACTANCES

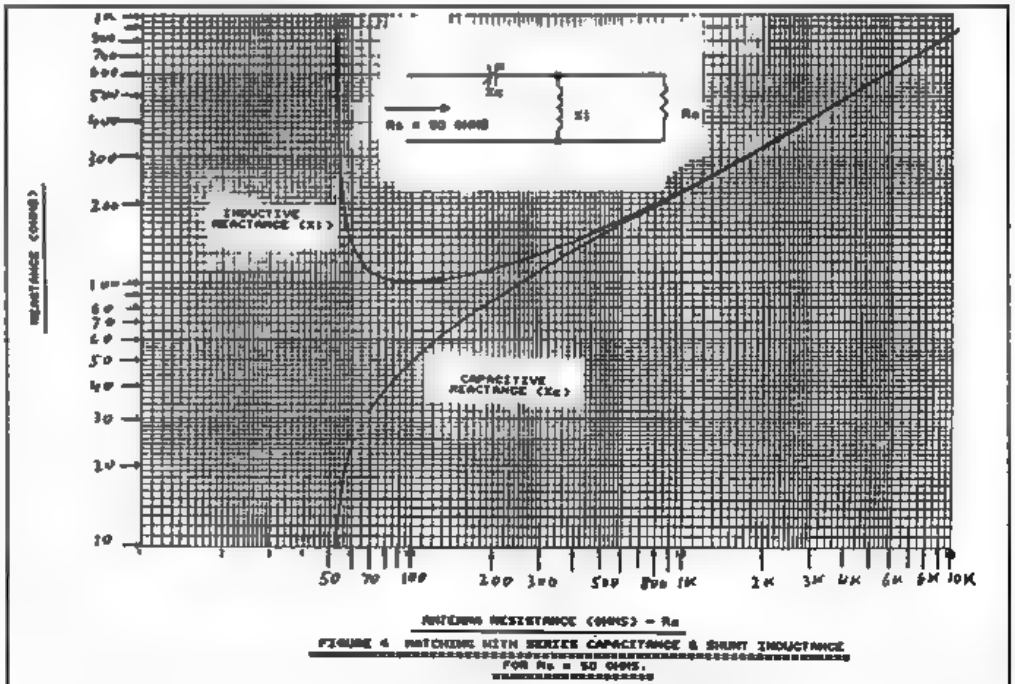


(a) CIRCUIT REACTANCES AT 14 Mhz

(b) CIRCUIT REACTANCES AT 21 Mhz

(c) CIRCUIT REACTANCES AT 28 Mhz

FIGURE 3 HIGH BANDS CIRCUIT REACTANCES



ANTENNA RESISTANCE (OHMS) - Ra

FIGURE 4 MATCHING WITH SERIES CAPACITANCE & SHUNT INDUCTANCE FOR Ro = 50 OHMS.

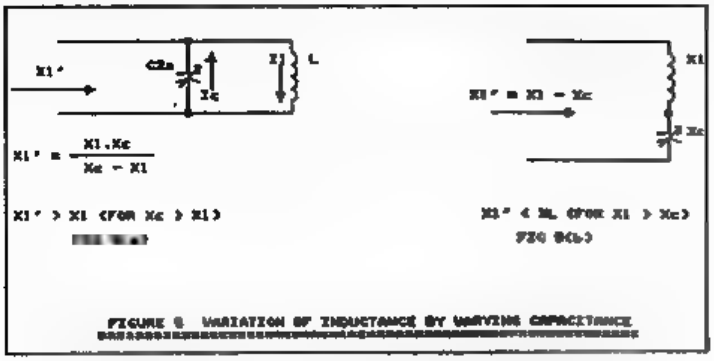


FIGURE 5 VARIATION OF INDUCTANCE BY VARYING CAPACITANCE

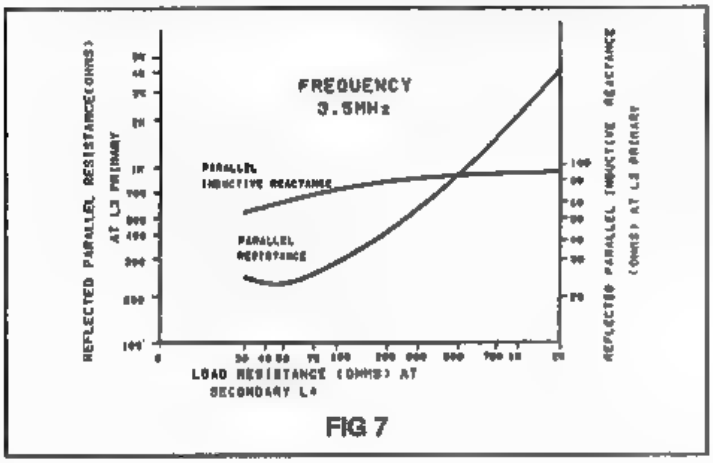


FIG 7

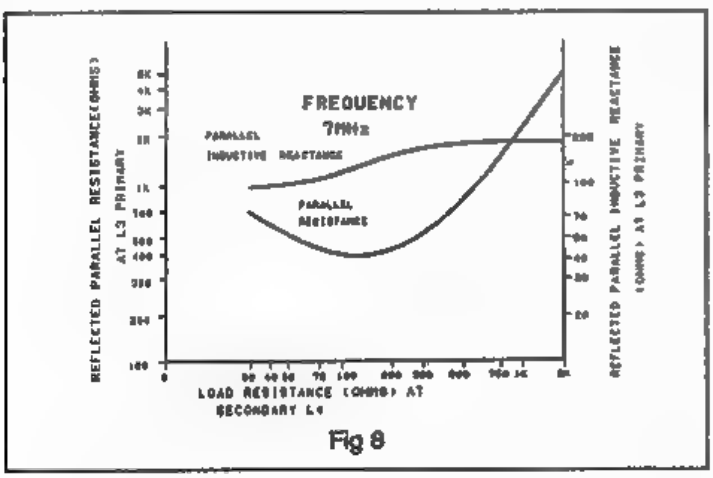


Fig 8

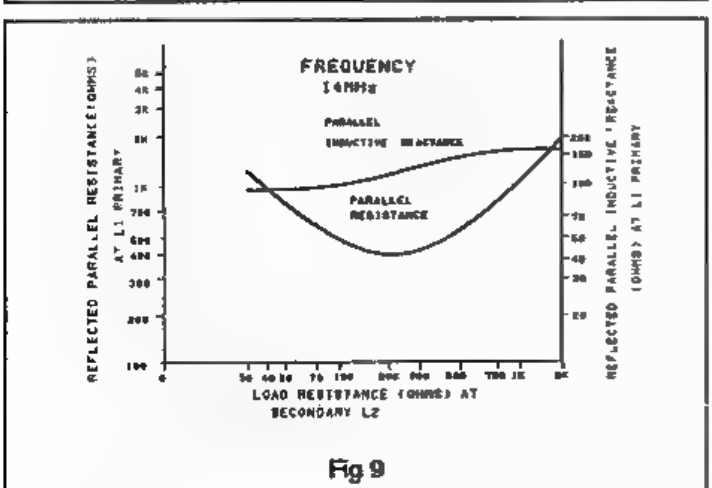


Fig 9

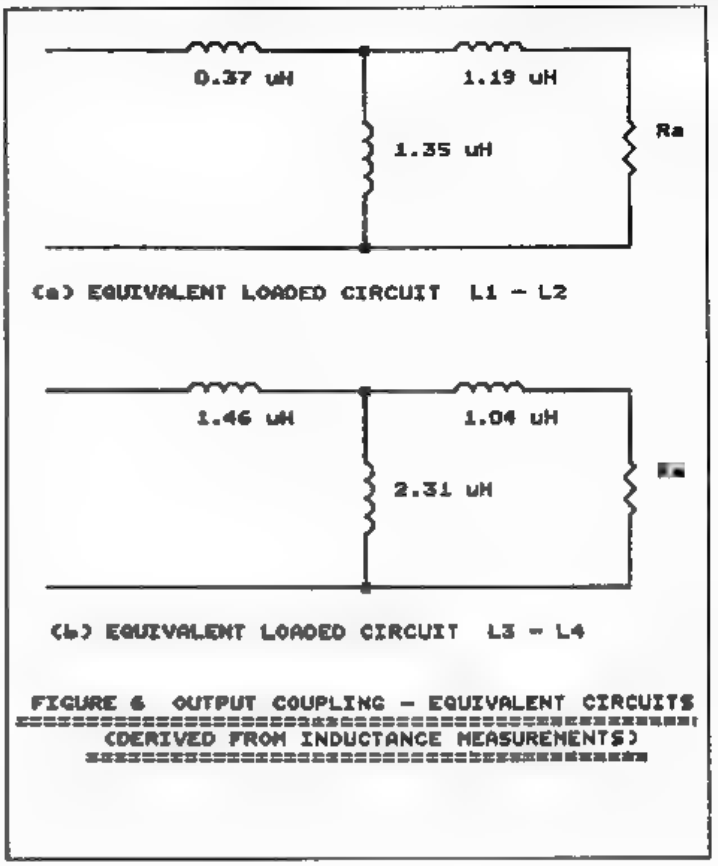


FIGURE 6 OUTPUT COUPLING - EQUIVALENT CIRCUITS (DERIVED FROM INDUCTANCE MEASUREMENTS)

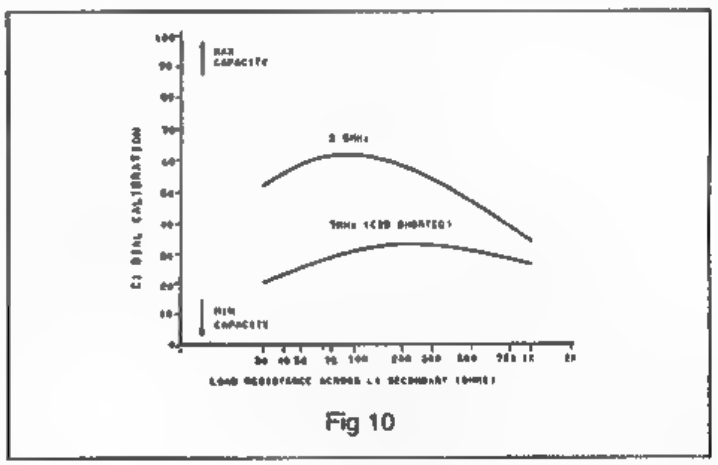


Fig 10

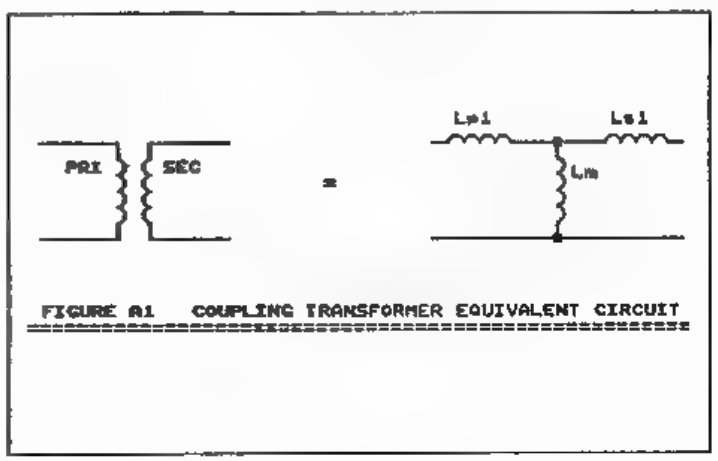


FIGURE A1 COUPLING TRANSFORMER EQUIVALENT CIRCUIT

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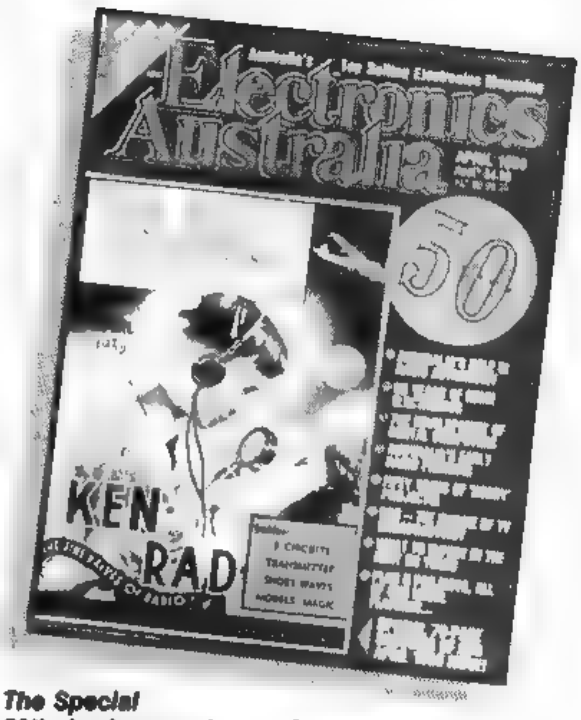

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How to Record the Weekly Broadcast

Peter O'Connell VK2EMU
3A Algernon St
Oatley 2223

It is possible to use a video recorder as an audio recorder to tape the weekly WIA broadcast. There are two advantages of video recorders over a normal cassette recorder. They can be programmed to start and stop - often up to 14 days in advance. They can also record up to 4 hours of audio (or 8 hours if you have a half speed machine). Once you have recorded the broadcast, then you can easily replay it on your television - just listen to the audio and forget the picture! You could also replay the audio through the household stereo system or a purpose built audio amplifier.

The following circuit was built up to convert the high level audio from the speaker terminal of a 2 metre hand held to the low level required by the audio input of a video recorder. The circuit was encapsulated inside a piece of PVC electrical conduit.

If possible, you should use a power supply for the 2 metre handheld, as the batteries may run down halfway through the broadcast. You will also need to check the audio level through the television. The exact location of the handheld will also need to be checked as some video recorders give out low level RF signals in the 2 metre band (and possibly many others as well!) An external aerial could be of some use.

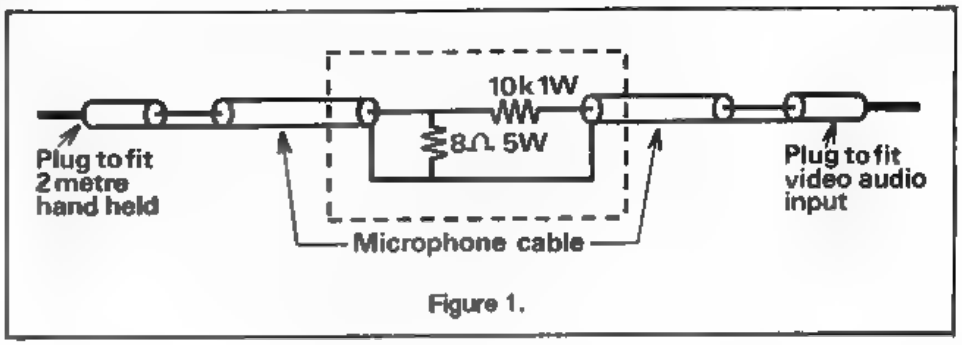


Figure 1.

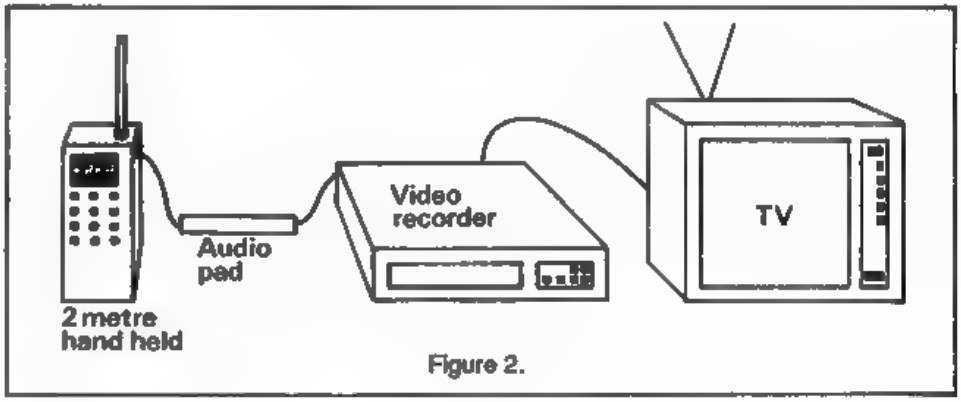


Figure 2.

A Z Match Antenna Tuning Unit

Dean Probert VK5LB
RMD Verrall Road, Hope Forest, SA. 5172

This tuning unit is capable of matching balanced feedlines and requires only two tuning capacitors to set the matching.

Balanced feedlines, used in conjunction with an antenna matching system, require some form of balancing circuit. A transmatch usually has an unbalanced output and if this output is to be coupled to a balanced feedline, it must be coupled via a balancing transformer or balun. There are problems in the design of a suitable transformer if a wide range of load impedances and frequency bands are to be encountered. The Z match circuit addresses the problem by tuning the coupling transformer primary so that it forms part of the matching circuit.

A Z match tuning unit has been constructed by the writer based on limited information published in the RSGB Handbook. The circuit diagram for this, including coil winding information, is shown in Figure 1. A feature of the circuit is that it requires only two tuning capacitors for matching adjustment. Matching inductors, come coupling transformers, are fixed in value of inductance with no switching or other means of adjustment required. The output circuit (L1, L2) or 14, 21 and 28 MHz is separated from the output circuit (L3, L4) for 3.5 and 7 MHz.

In the following paragraphs, the writer discusses how the Z match unit has been constructed and how it has performed using different antennas. More detail on the theoretical aspects of this unit was given in a supporting article written by Lloyd Butler VK5BR.

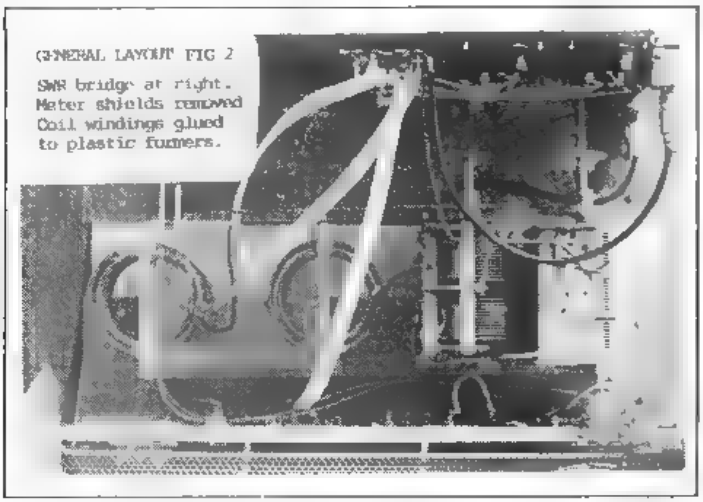
Construction

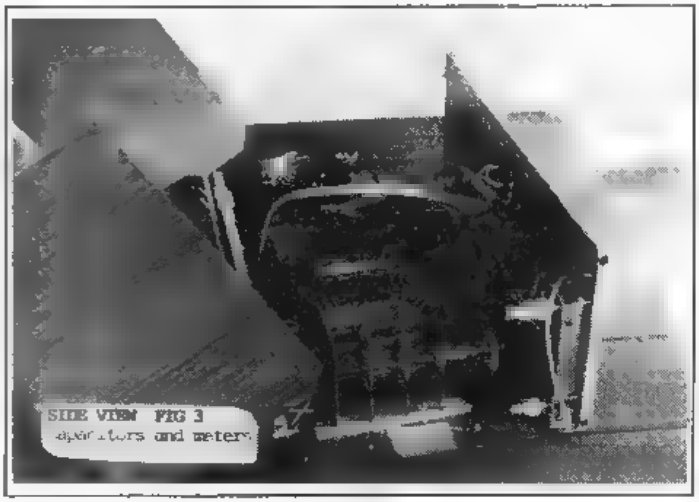
The specified capacitance for C1 is 500 pF and for this component, a three gang receiver tuning capacitor, with stators paralleled, was used. Capacitance achieved is more than 500 pF and this is discussed further in the article by VK5BR. C1 rotor must be insulated from ground and its shaft must be connected via an insulated coupling to the dial shaft. To achieve this, tabs were soldered to both shafts and bolted to a disc cut from an ice cream bucket. The coupling not only insulated the capacitor shaft from the dial shaft, but also provided a flexible coupling between them.

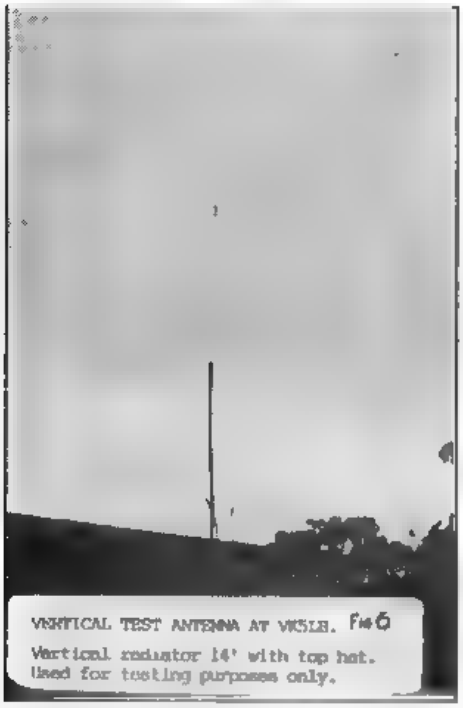
For C2, a split stator unit with 250 pF per section was used. In this case, the rotor is grounded although the same type of insulated shaft connection was used to provide a flexible coupling. Plate spacing in the two capacitors is only 0.015 inch but no arcing problems have been experienced by the writer in driving the Z match unit from a 300 watt sideband transmitter.

The coils were wound to the details given in Figure 1. They were supported by plexiglass sheet which was drilled to suit the dimensions given in Figure 1 and the wire was then threaded through the holes and cemented in place. In operation, there has been no evidence of the coils becoming hot and hence there is no danger of the plexiglass melting. The coil assemblies and the capacitors were mounted on a plastic sheet which was then bolted into the tuner cabinet. The coil assemblies and the mounting of coils and capacitors in the cabinet, can be seen in Figures 2,3 and 4.

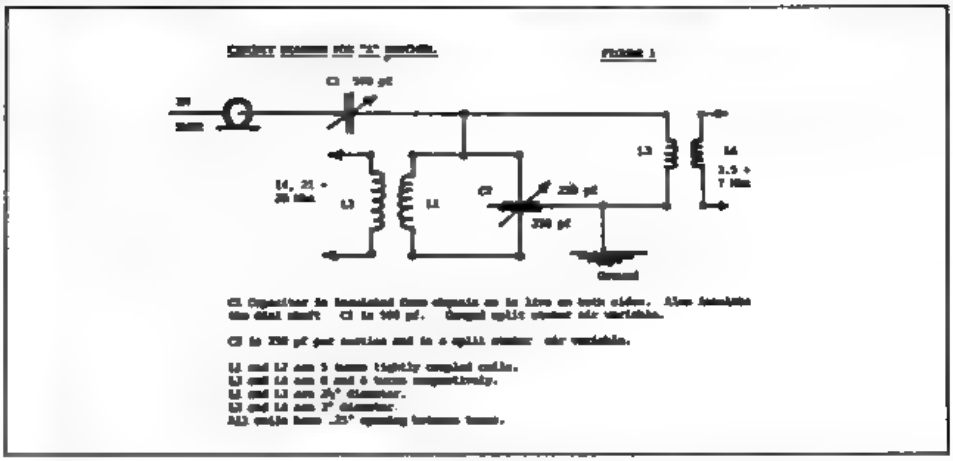
The coil assembly outputs can be connected directly to the two output connectors on the cabinet, one for the 3.5 and 7 MHz circuit and one from the 14,21 and 28 MHz circuit. At the time the unit was







VERTICAL TEST ANTENNA AT VK5LB. Fig 6
Vertical radiator 14' with top hat.
Used for testing purposes only.



photographed, a switch mounted in the cabinet was being used to connect either of the two outputs to the one G5RV antenna. Some other system might be suitable for others who might contemplate using this tuner.

An SWR/Power meter was included in the tuner cabinet. Meter wiring was shielded to prevent the high RF field from affecting the meter circuits and as an extra precaution, a metal shield was fitted around the meters. This shield has been omitted in the photographs so that this section can be seen.

The front panel layout is shown in Figure 5. Vernier dials have been used to improve tuning resolution. This is desirable as settings are quite critical on some loading conditions. Sometimes the settings are difficult to locate at first, but once found, they can be recorded on the logging scale and used as a reference when returning to that particular band and antenna combination.

The writer has adopted the practice of first loading the transmitter into a 50 ohm dummy load and correctly setting the PA tuning and output coupling for that load. (A switch is provided on the cabinet to select either the dummy or the antenna load). The Z match unit, connected to the antenna, is then set for low SWR reading, together with the same loaded PA condition as that set for the dummy load. If the PA tuning dip occurs at the same point and the loaded current is the same, it can be assumed that the matching unit is reflecting 50 ohms resistive load to the transmitter. This procedure is particularly applicable to valve type PA stages which normally have adjustable tank tuning and antenna loading controls. In transistor PA stages, the output circuit is more likely to be fixed and set for correct loading on 50 ohms resistance.

Performance

The writer constructed the Z match unit, generally accepting the specifications given in the RSGB handbook (refer Figure 1). An exception to this was the use of a larger than specified capacity three gang tuning capacitor obtained from the junk box. At the onset, the writer was unsure of what effect this would have on the Z match tuning range and this is addressed in the VK5BR article. As it turned out, C1 as fitted was certainly larger than necessary and, in fact, its higher minimum capacity made matching more difficult on the highest frequency bands

In practical operation, the unit matches a G5RV dipole, via a 300 ohm ladder line, on all bands between 3.5 and 28 MHz. It was pointed out in the VK5BR article that the inductance on 7 MHz seemed too large and better matching would likely be achieved with the floating section of capacitor C2 shorted out. This appeared to be supported in operation with the G5RV, as without the shorting connection, C2 had to be set to minimum capacity. With the shorting link connected, C2 was set to about two thirds of the dial calibration range.

A temporary 14 foot vertical antenna was also set up for further experiments with the Z match unit

The antenna, shown in Figure 6, was operated against a ground

COIL DETAIL.
Output coil is outer winding
FIG 4

Fig 5: Front Panel View

plane consisting of the aluminium roof of the writer's house. Open wire balanced feedline was used as a temporary means to feed the antenna from the Z match unit. Matching was achieved on all bands despite the wide variation in load impedance which this system presented.

Adjustment of matching is a simple procedure. C1 is first set to mid-range and then C2 is tuned through its range until a dip in reflected power is observed on the SWR meter. C1 and C2 are further adjusted, alternatively, until a low SWR ratio is achieved. Some matching conditions are easy to obtain and others require some patience.

Summary

The Z match unit is easy to construct and easy to tune. It matches widely varying load impedances and couples to balanced lines and other balanced antenna circuits.

There are no switchable or adjustable coils in the circuit and all components are easily obtained, or, in the case of the coils, easily assembled. Layout is not critical providing the two pairs of output coupling coils are separated sufficiently to minimise mutual coupling. The unit has much to recommend it for those who wish to use balanced lines.

Newspaper

If you see any articles concerning the hobby of amateur radio or a subject which could be of interest to radio amateurs published in a newspaper or elsewhere please send a copy to Amateur Radio magazine.

Mark your clipping or photocopy clearly with the name of the newspaper or other publication and the date the item was published.

Contributions should be send to the News Editor, Amateur Radio magazine, PO Box 300, Caulfield South Vic 3162.

Errata Remembrance Day Contest, April Issue

Some errors and omissions have been noted in the above contest. Please note:

VK2 - HF Phone	
VK2ALZ	124
VK3 - VHF Phone	
VK3XBA	100
VK3 - HF CW	
VK3XB	194
VK4 - HF Open	
VK4AT	60
VK4 - HF Phone	
VK4OL	200
VK4 - VHF Phone	
VK4APG	90
VK5 - HF Phone	
VK5TY	85
VK5 - VHF Phone	
VK5SE	120
VK5TY	90
VK6 - VHF Phone	
VK6WC	43
VK7 - VHF Phone	
VK7ZJH	53

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The Town of Bad Bentheim will defray all expenses incurred in connection with the journey and accommodation of the winner. The decision on the award is not subject to the jurisdiction of courts.

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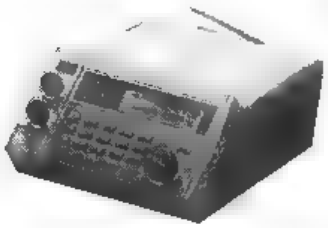

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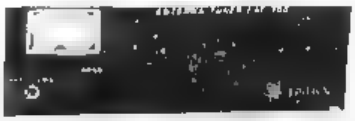

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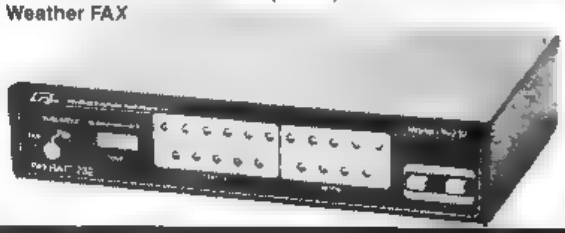

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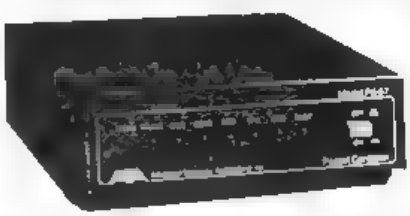

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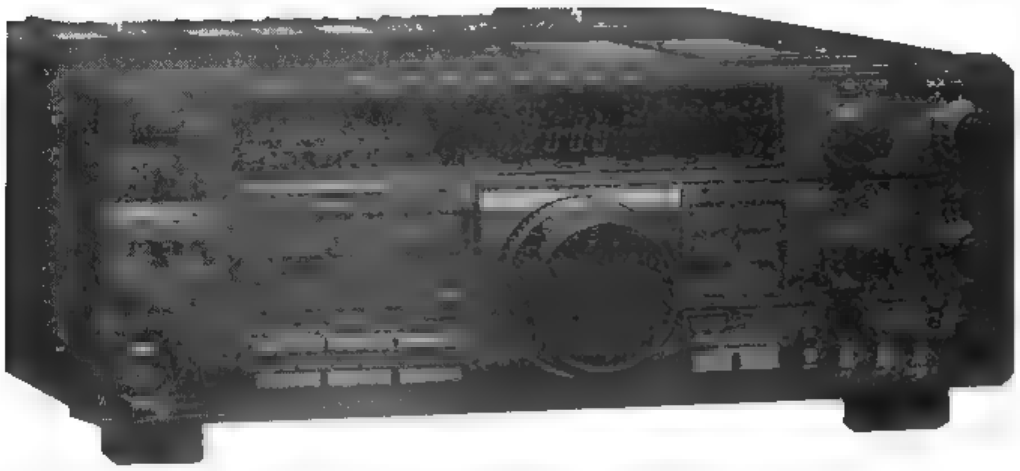

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A Perspective On Amateur Radio In VU–Land

by Jim Linton VK3PC

The warm community-style friendship among radio amateurs in India and the hospitality they afford to overseas visitors has left lasting impressions with John Hill VK3WZ and his wife Cynthia.

Last year they toured Bombay, Goa, Cochin and Bangalore. They recently returned from a similar trip and next time in India John hopes to have his own VU callsign.

John says in the pleasant city of Bangalore each day there's a 7.15am net on two metres where radio amateurs in a true spirit of cooperation help each other.

Not everybody has personal transport, and public transport is somewhat difficult, so on the morning net they arrange among themselves to pick up personal messages for each other during the day. This regular daily contact has created a community within a community.

The two metre band, mainly simplex although there is a repeater at Bangalore, provides a better means of communication than the telephone system which John Hill describes as poor compared with Australia. Often phone calls drop out in the middle of a conversation.

There was practically no mobile operation because this requires a special mobile licence only available for short periods. But there are plenty of hand–held radios used in cars and while pedestrian mobile.

John described the Bangalore Amateur Radio Club as being the most advanced and active, and having a widespread representation in its membership of the various age groups.

John and his wife were the guest of VU2JX who is known by the abbreviated name of "JS" and his wife Gita Srinivasan, who had just qualified for an amateur licence and was waiting for her own callsign.

They also spent some time with Les King VU2AK and Audrey King VU2YL. John and Cynthia described the hospitality of these people as absolute overwhelming.

The radio amateurs in India are mainly those who have professional employment. From his observations John believes at least 60 per cent of OM operators have XYL's who also have taken out an amateur licence. Spouses can be frequently heard chatting on the two metre band.

Residents of India taking out an amateur licence are required to make 50 contacts during the first year as a prerequisite for the licence to be renewed.

The main equipment used was Yaesu and Icom. To import equipment an Indian radio amateur needs to apply for a special importer's licence on which he or she is allowed to import gear to the value of about $A400 once a year.

With the emerging local technological manufacturing industries personal computers are becoming affordable for use by radio amateurs, which should in the years to come see greater numbers on packet radio.

Technology development in India is supported by the Government, headed by Rajiv Gandhi VU2RG. Radio clubs can apply for government grants to help them with projects.

The Indian Ministry of Communications issues licences to visiting radio amateurs which will take three months from application to licence issue.

An information sheet from the Ministry says a separate import licence is required for the importation of radio equipment even as personal luggage

John says he would not travel overseas without his 2 metre hand–held, and always declares it on departing Australia to ensure no difficulties with customs on his return.

The frequencies used in India are. 3.500–3 540 (shared with other services), 3.890–3.900, 7 000–7.100, 14.000–14.350, 21.000–21.450, 28.000–29.700 and 144–146MHz

India is ideally placed for DX activity being geographically between Europe and North America, and South-east Asia.

However, a recent internal dispute within the amateur radio fraternity has seen the handling of QSL cards grind to a halt.

Waiting for a card from VU? John Hill says QSling at present to the VU bureau is virtually a futile effort and he advises QSL's be sent direct.

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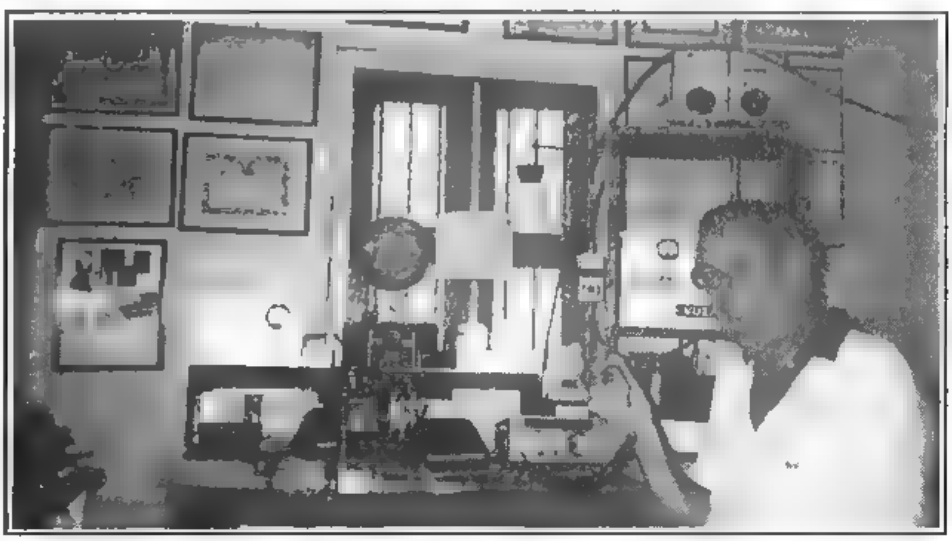

Working some of the locals in Bangalore is John Hill VK3WZ pictured in the shack of husband and wife Les King VU2AK and Audrey VU2YL

by Gil Sones VK3AUI

Review of Yaesu FT4700RH Dual Band FM Transceiver

Review Rig Supplied by Dick Smith Electronics

Yaesu have managed to pack into a standard FM Transceiver size two complete transceivers. Even more impressive are the power outputs of 50 Watts on two metres and 40 watts on 70 centimetres. Both have all the usual features that you have come to expect.

Initial recourse to the manual is recommended as the transceiver is extremely versatile . You will probably want to use your own brew of features such as frequency step sizes and scan limits. The memories store the offset for repeaters which is very useful.

One feature which can be fitted is tone squelch. This could be the shape of things to come as it would enable greater sharing of channels. Groups within range of the very sensitive receiver could operate independently enabling a greater number of users. You would only have your receiver unmuted by stations within your group.

The transceiver is really two completely separate radios housed in the one box. The control circuitry and the front panel are the common elements. It is possible to talk on one band whilst listening on the other. In this way full duplex operation is possible.

A novel and useful feature is the ability to remove the front panel module and operate the RF side of the radio from three metres away. To do this all you need is an accessory cable kit . This should be a relatively cheap option. The radio could be mounted in the boot and the front panel controller beside you on the dashboard or console. The controller is easily detachable so that you can take it with you when leaving the vehicle or place it out of sight in a safe spot. Quite a feature these days.

Memory cloning is another useful possibility. This only requires a cable link between the microphone jacks of two transceivers and the memory contents can be transfered from one to the other.

On test the radio easily met the power output of 40 watts on 70 centimetres and 50 watts on 2 metres. Very impressive considering the small size of the radio. Of course this much power output in such a small package results in the generation of a lot of heat. The heat sink is fitted with a small fan which operates on a thermostat. Thus the heat is removed before it can become an embarassment.

Another consequence of this much power output is that you will need some really solid DC supply arrangements. In your car thick wires right to the battery terminals would be desirable. At home a power supply such as you would use for your HF rig is called for. The power output is only half the peak power of your SSB transceiver and the duty cycle is much greater

A pat on the back to Yaesu for using a Type N connector for the 70 centimetre antenna lead The two metre one is still one of those horrid UHF types. With the sort of receiver sensitivity built into this radio surely it deserves a type N on two metres as well.

Operation is a breeze and the transceiver comes out of the box with everything needed to get on the air. The packing is first class and is very much the usual Yaesu Standard. The instruction book comes with circuits but unless you have better than the usual workshop the case is best left in place. The circuit is there only to help you understand the radio and give you a warm feeling.

Construction and quality are such that you should never need to touch the internals. With the widespread use of surface mounting and very small components service is best left to the agents.

The only hard thing about this rig is giving it back or alternatively paying for it. The reviewer opted for giving it back but if you want to operate two bands with a very neat rig then a careful review of your finances is in order. The price is after all quite modest Just a few years ago you would have needed two complete rigs and two bulky amplifiers to do the same. The cost of all that would likely have been more than the price of this rig in our current devalued dollars.

Summing up the Yaesu FT4700RH is a very impressive dual band radio at a relatively modest price.

ar

Equipment Review

Ron Fisher VK30M
'Gaalanungah'
24 Sugarloaf Rd
Beaconsfield Upper

The Realistic HTX-100 10 metre SSB/CW Transceiver

I am sure that the REALISTIC brand is well-known to all of our readers and of course REALISTIC is distributed by your local Tandy shop. After many years, Tandy is releasing a genuine amateur transceiver. It is certainly not just a worked-over CB transceiver, but a full featured ten metre band mobile or fixed station rig. I hope Tandy might see fit to extend their amateur range in the future. The transceiver is actually made for Tandy by UNIDEN in Taiwan and of course these days UNIDEN is well known for their range of VHF/UFH scanning receivers and also CB equipment. I note from American magazines that UNIDEN produce alternative versions of the HTX-100 for sale in that country. Well, just what is the HTX-100 like and what does it do? It is an SSB/CW transceiver rated at 25 watts output and has a coverage of 28 to 29.7 MHz. It tunes this range in selectable steps of 100 Hz, 1kHz and 10kHz. It also has a 500 kHz stepping button for really fast frequency excursions. It has ten memories which when selected can still be over-ridden by the normal tuning control. Other controls include RIT, RF gain, audio gain, squelch, a frequency lock switch, a noise blanker and a MOX switch. A large clear LCD provides the operator with information on frequency, mode and memory selection. A five LED display acts as an 'S' meter and RF power indicator. 3.5mm connectors allow a key to be plugged in for CW and a headphone connection on the front panel.

The overall size of the HTX-100 is similar to the two metre FM transceivers of the 1970s. The actual dimensions are 185mm wide, 63mm high and 245mm deep including knobs and heat sink. The rear panel carries an SO-239 antenna connector, a 13.8 volt DC connector and two 3.5mm sockets for external speaker and the CW kay. A mobile mounting bracket is a standard feature.

Front panel view of the HTX-100 Transceiver

The HTX-100 on the air

The transceiver requires a 13.8 volt DC source either from suitable AC power supply or a car battery in the case of mobile operation. If using an AC supply, it would need to be rated at about 5 amps. For my tests, I used a 20 amp supply. The first impression is the very clear green illuminated LCD display. Receive current drain is about 450 mA, transmit standby drain is about 750mA and transmit with full power output on CW is 4.8 amps. Peak current drain with SSB would be about the same but any ammeter showed an average drain of around 2.5 amps.

The only antenna I have available for 10 metres at the moment is an 80 metre half-wave fed with tuned feeders through an ATU. Not the best DX antenna in the world, but the first call using the HTX-100 produced an S6 report from a ZS in South Africa. I was to say the least rather surprised. After this I settled down to try out the various controls. The tuning steps are selected sequentially by pushing the step button. As each step is produced the step digit on the display is underlined. Memory programming is very simple, just tune to the required frequency and push the 'store' button and it's there. Your preferred mode can also be programmed with the frequency. ALL of the ten memories are fully tunable which is ever so much more useful than the fixed memories that many HF transceivers have these days. The RIT control has a range of +/- 1.3 kHz but there is no provision to switch it out. The control has a central detent but with no in/out switch and no status indicator you would need to be careful that it is not inadvertently left on. Unfortunately the frequency display does not show the offset either.

Receiver sensitivity appeared excellent and in general signals sounded clean with excellent AGC action. The speaker is mounted in the bottom cover of the rig and produces quite acceptable quality as long as it's facing you Audio power output also appeared to be reasonably adequate. The receiver 'S' meter is calibrated at S3,5,7,9 and 'over'. I guess you could say that for mobile operation it is adequate enough. The 3 5mm headphone socket on the front panel is wired for single circuit plugs only so if you want to use your 'Walkman' headphones there will be sound on one side only. However, Tandy can sell you a stereo to mono adaptor.

Transmitted audio quality was rated as slightly thin and restricted but there appeared to plenty of talk power. The transmit audio gain is fixed with no front panel control but speaking about 5 or 6cm from

the microphone seemed about right. CW operation is semi break-in with side tone through the speaker which is level adjusted with the normal receiver audio gain control. After transmitting, the rig goes back to receive after about one second. I felt that this delay was a bit too long and you could miss the first couple of characters from the station you are working. There does not appear to be any adjustment on the delay.

The tuning control deserves mention. It is a click step type with about 22 steps per revolution. This is certainly rather unusual for an HF transceiver, but I found it very pleasant to use. It gives a tuning rate of about 2 2kHz per knob revolution when the 100Hz stepping rate is selected.

The noise blanker was most effective in eliminating low level electrical hash and car ignition noise. There was no sign of receiver cross modulation with the blanker switched in.

Up/down buttons are provided on the top of the microphone and these allow stepping through the memory channels when in memory mode and give transceiver tuning when in normal mode. With 100Hz steps selected, the scanning rate is about 1kHz per second which is just a bit too fast. Again no adjustment is provided. All in all, I found the HTX-100 a very pleasant and easy rig to use. All the controls did exactly what you would expect of them and the overall performance was very good.

The Instruction Manual

The instruction manual is just that. It tells how to set up and operate the rig in a clear and concise manner. The only technical information supplied is a circuit diagram which requires a magnifying glass or better eyes than mine to read. I don't know if a service manual is available from Tandy.

The HTX-100 Conclusions

The rig should sell for just on $500. However, it does offer a lot. Let's look at a few suggestions. First of course with the ten metre band on the up and up it offers wonderful possibilities for mobile DX For the home station you would be able to run it continuously on the band waiting for openings It also has possibilities as a driver for a VHF transverter for say, two metres SSB.

There is, though, one big disappointment with it and that is, there is no FM. This does seem strange as the UNIDEN clone available in the States does have FM I can only assume that Tandy have done their research on the market and know what they are doing. But for what it is, it does an excellent job. Our thanks to Tandy Australia for the loan of the review transceiver.

Book Review

Harold Hepburn VK3AFQ
4 Elizabeth St,
East Brighton 3187

ARRL Antenna Handbook

The 15th edition of the ARRL "Antenna Handbook" is probably the best value for money on the amateur market today.

The new "Handbook" brings together in one place most of the antenna information published by the ARRL in the past many decades. All of the older, seminal, designs are covered as well as the more modern concepts and modifications stemming from them.

Antennas come in all shapes and sizes - from a simple random wire to very complex arrays - but all perform to the same basic principles. The new "Handbook" clearly explains these principles and then goes on to help one choose an antenna suitable for a particular purpose or a particular environment - be it broad acre or cramped suburbia.

Hundreds of different antennas are described and each has information on how to build, install and adjust it. Included are wires, loops, quads, quagis, helicals, verticals, discones, beams, log aperiodics, DDRR's, slopers, broadband "receive only" antennas and a host of others including those for restricted spaces and/or portable operation.

Always looked upon as the most desirable repository of antenna lore, this latest ARRL edition is nearly twice the size of its predecessor, has thirty chapters, a comprehensive index and is about two-thirds the thickness of the current edition of the ARRL "Radio Amateurs Handbook".

Both HF and VHF enthusiasts are well catered for with "ready to go" systems for those not wishing to do the design work themselves. For those wishing to put in the extra work, or delve more deeply into the whys and wherefores of a particular antenna, there is plenty of design information and a comprehensive bibliography. Of particular interest is the expanded section on loop antennas (both receiving and transmitting), the section dealing with travelling wave antennas and the chapter covering space communications.

The individual chapters deal with safety (perhaps properly the very first chapter!) antenna fundamentals, transmission lines, matching and measuring techniques, the effect of the earth beneath the antenna and, indeed everything needed to put up the best possible radiator that the surrounding environment allows.

The writing style is clear and unambiguous, making even the most complex concepts easy to follow and understand - a virtue not necessarily shared by the original writings on which this compendium is based.

It matters not whether the reader is an old, old timer or a very recent licensee - the book has something of interest and/or novelty and can be considered a "must" for all amateurs.

Understandably most of the information is of American origin - more specifically material published in QST at some time or another - although there are a few references to material appearing in other American amateur publications. There is little or nothing accredited to European or Australian sources, in spite of a lot of excellent work done in these areas. This is a pity but by no means a drawback.

The review copy of the "Antenna Handbook" came from Stewart Electronic Components P/L, 44 Stafford Street, Huntingdale, 3166.

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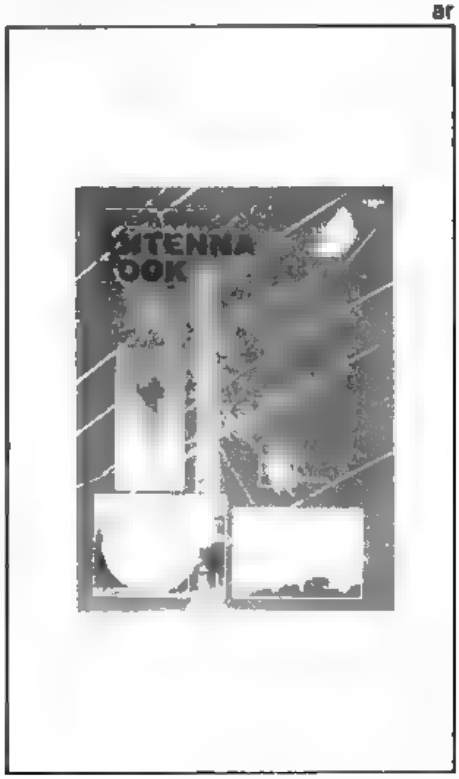


FORWARD BIAS

John Moyle Field Day

Norman Gomm VK1GN
19 Krichauff St
Page ACT 2614

For this year's John Moyle, the Division operated VK1WI from 80 metres through to 23cm at Bull's Head in the Brindabella mountain range. The team consisted of Ted VK1AOP, John VK1ZAR, Phil VK1PJ, Ian VK1DI, Roy VK1KAJ, Peter (a non-ham), an XYL and yours truly.

The group arrived at the proposed site on the Saturday, to be greeted by a fine Brindabella mist which later developed into a steady drizzle which persisted for most of the weekend. Most of the morning and early afternoon were taken up with trying to throw little lead weights over tree branches. Amazingly, two dipoles and a G5RV eventually appeared above the ground without being too tangled up.

Phil's efforts to erect the 40 M dipole were a sight to be remembered. His words when it fell down were words to be forgotten.

A fifty foot mast for the VHF beams was erected with some difficulty and lots of advice. The low frequency people were quite impressed with the ability of the VHFers to get the beams all pointing in the same direction, but forgetting to allow enough loop for rotating the mast.

Power was provided from two petrol generators and batteries. Ted VK1AOP was kept busy working on the generators which seemed to have minds of their own and a frequent desire to be refuelled.

After skilfully monitoring the bands for activity, the team swung into action late Saturday afternoon. 40 and 80 metres were the most active of the HF bands, with 2 metres providing the most interest for those who are short on wavelength.

Over 500 contacts were made over the station's operating period and we won a bottle of port from an unnamed VK2 station. An enjoyable weekend.

Repeaters

In March the Ginni repeater went down. The fault was traced to the drive to the final stage and as a temporary measure the finals from the packet repeater have been temporarily transferred until repairs can be made.

ITU Day 1989

ITU Day is on 17 May 1989. At this stage venue and other details have not been finalised, but if you have any interest in the activity please contact Norm VK1GN on 548512.

Yass Social Day

Unfortunately the get-together between the Goulburn, Young, Wagga and Canberra amateurs planned for Sunday 2 April was washed out. There are plans to try again on another date. George VK1GB who was masterminding this one, has been asked for a legal opinion on the usefulness of weather forecasters.

WAWC

On Sunday May 21 the Division will be running a social event to replace the washed out Yass picnic. It will include a BBQ at 12 noon.

The feature event will be the WAWC Award (no prizes for guessing the title). It will be on 2 metre simplex and last for 1 hour, and is open to all comers.

Classes

Classes have commenced under the tutelage of Bob May VK1BM at the Ainslie Scout Hall. If you are interested please contact Bob on 57 2929 at home.

5/8 WAVE

New Faces....

Jennifer Warrington VK5ANW
59 Albert St
Clarence Gardens 5039

It's nice to welcome new people into WIA Offices, although inevitably it means saying good-bye to others. In the past few months we have had three and by next month I shall hopefully be able to tell you of a few more

Our new Disposals Officer is Barry Chammen VK5KXC and we wish Barry a long and happy association in the job. We would also like to thank Rob Gurr VK5RG for volunteering his services when we were in desperate need of help before we received Barry's offer. To Steve VK5AIM, who became disillusioned by what he considered Council's lack of action, we would still like to say thanks for the many hours that he did put in, over a period of several years, and at times went out of his way to help widows dispose of Deceased Estates, even to taking down towers for them.

Graham Iles VK5AT has had to relinquish the job of WICEN Director, due to other commitments and had handed over the reins to Ian Watson VK5KIA. We're sorry to lose you Graham (not only for your 'dry' wit, and Joan's cups of coffee at Council meetings!) but I'm sure Ian is going to prove an excellent replacement. Even in non-WICEN activities his ability to help wherever needed has already been noticed.

Our third new face is Wayne Kingscott

VK5AC. Wayne has just taken over from Ron VK5AAC as Morse Practice Roster Co-ordinator. Ron has been doing this job as well as being one of the operators, for many years and we thank you for all the hours you have given, Ron.

And not so new faces

So many people give so many years of service to the Division that it is always hard to choose the recipient for the March ICS Award donated every quarter by John Moffat VK5MG of International Communications Systems. This year it was decided to present it to Emlyn Jones VK5AEJ for the 11 $^{1}/_{2}$ years that he has been the Saturday night operator on the Slow Morse Practice Panel. During his highly amusing acceptance speech, Emlyn informed us that he had only taken on the job for 3 weeks, and here he was 11 $^{1}/_{2}$ years later! (sounds like a familiar story). Thank you for staying on for all those years, Emlyn, and I know I speak for many others who have appreciated your sessions.

Diary Dates

Tues 2nd MayAnnual General Meeting 7.45 pm

Tues 23rd MayGeneral Meeting - "Ask the Council" (mainly to feed back to the General meeting information on the recent Clubs' and Federal Conventions) 7.45 pm

Tues 30th MayBuy and Sell night (no ESC, Publications, etc.) 7.30 pm.

VK6 BULLETIN

New Council Elected

by John Sparkes VK6JX
83 Anemone Way
Mullaloo 6025

Well, VK6 has done it again – 9 nominations for 9 positions on Council! This saves a lot of time with elections, and minimises the heartbreak of missing out on the chance to put something back into the hobby we all love.

We have had 5 very longstanding, hard-working stalwarts stand down this year for various important reasons, and may I now thank them very sincerely, on behalf of all members of the VK6 Division, and Amateur Radio generally, for their much needed gifts of time and dedication over many years. This hobby really is better because of you, and we won't forget your contributions. They are:

Christine VK6ZLZ, immediate past president and Bookshop manager.

Cliff VK6LZ, immediate past treasurer and salvage sales officer.

Fred VK6PF, immediate past secretary – and a special vote of thanks to Fred for his tremendous efforts and dedication in the Wanneroo Radio Mast Case.

Gil VK6YL, representative of the WA Repeater Group

Malcolm VK6LC, immediate past vice president and Slow Morse/Morse Workshop co-ordinator

The depth of knowledge and experience represented by the above 5 people will be sorely missed by the council – but they'll only be a CQ away – as now they will all have a bit of time left for Amateur Radio!!

I would now like to introduce you briefly to your 1989/90 council with the aid of a quick "thumbnail sketch" on each officer. The "tar" used in these sketches had been provided by various "friendly" sources – so don't blame me if it ain't 100% accurate!

Alan VK6KWN (President) Alan was in radio in the Air Force over east for many years. He changed from VK6ZGA to KWN a fair while ago and he hasn't been president before, but has appeared on council for quite a few years previously. Affectionately known as "The Voice", Alan enjoys a good pepper steak, and designing 2 metre collinear antennas!

Harry VK6WZ (Vice President) Harry has been providing the excellent VK6 News service for some time now, receiving accolades not only locally, but from interstate for his racy style. He has been an amateur for longer than most can remember, and has a long history in media journalism. He lived in Albany for many years, and thus helps provide the most necessary "country members" viewpoint. Harry tells it the way he sees it – despite being legally blind, and he is tied up with various organisations assiting the disabled.

Neil VK6NE (Federal Councillor) Neil joined Telecom in NSW as a trainee technician in 1951 and his interest in Radio grew with the help of local amateurs. He got a Z call in 1956 when he moved to VK6, then a full call shortly after. Alan 6KWN helped to get Neil onto the VK6 council and he was secretary of this division for 13 years. Neil enjoys the diversity and challenge of the administrative side of our hobby and has been our Federal Councillor for the last 21 years. He believes we must now preserve the privileges we enjoy, and be prepared for new modes and techniques. Neil is also the Federal QSL Manager.

Bruce VK600 (Alternate Federal Councillor) Bruce was born in WA a long time ago and became an electrician. He then went to England and trained as a medical physicist. He obtained a G call, then VK600 when he returned to VK6 around 10 years ago. The only time Bruce's fine mind failed him was when he volunteered for Council, hence to be Divisional President for a number of years! He is a great asset as AFC due to his depth of knowledge, and articulate style. He loves electronics and refurbishing old equipment.

Peter VK6PK (immediate past Membership Secretary) Peter rocketed to fame 3 years ago as the Wanneroo Mast Case scapegoat. Peter is an ex-pom and held a G call before coming to Oz. His love is AMTOR, and he uses it to communicate with his amateur father and family back in England. Living was no longer "great" in Wanneroo, so Peter and family now reside in semi-rural Wooroolloo where an antenna farm is rapidly growing!

John VK6JX (VK6 Bulletin) John has been a ham since age 14, (14 1/2 years) but the (then) DOC wouldn't let him on the air until he turned 15! (Novices weren't heard of in those days!) John is now active again and is currently secretary of the Northern Corridor Radio Group, the premier radio club in VK6. He sees participation by all amateurs in their local radio clubs as the best way of keeping AR alive into the future

– that, and a strong WIA assisted by 100% membership!

John VK6GU John was a Sergeant in the Police Radio Section for many years. He then entered the Flying Doctor Service based at Wyndham then Derby for a fair while. He has been an amateur for a long time, but he is new blood in the council. John's experiences will also assist with understanding country members' problems, and a warm welcome is extended to you, John.

Tom VK6TR Tom is another old timer with a country background who is fresh on council this year. He was in the Telecom Broadcasting area, before taking station at the Mt Barker TV Transmitter site for quite a few years. He is now living in Albany, but will time his trips to the "Smoke" to coincide with Council meetings. Welcome, Tom.

Glen 6ZGT Glen represents the "young" blood needed on council.

He has held his call for only a few months, and his main interests are computers and electronics. We welcome you Glen and hope that study commitments don't encroach too much on your enjoyment of this great hobby.

That's about it for this month. Once again, good luck to the new VK6 council.

ar

VK2 BULLETIN

Council Elections Soon

Tim Mills VK2ZTM
PO Box 1066
Parramatta 2124

Last month (April) ended up the month of cancellations. By the closing date for Council nominations, only four had been received. Council extended the closing date a month - to 12th April and it now appears there will be more than the required number so an election is needed. Because of the later closing, the Annual General Meeting will now be held on Saturday afternoon, the 27th May 1989 at Amateur Radio House, 109 Wigram Street, Parramatta at 2 pm. Formal notification of the AGM is given in a separate report.

Sydney's wet at the start of April forced the cancellation of the proposed Trash & Treasure at Dural. This event will be held now on May 28th at VK2WI, Dural at 2 pm. Details via the broadcasts.

The annual fireworks display is set down for Saturday evening the 3rd June at VK2WI, Dural. The Oxley Region annual field day will be held at Port Macquarie 10/11 June. The site has been changed this year to a surf club at Lighthouse Beach. Details from the Club at PO Box 712 Port Macquarie 2444.

It looks like a typo found its way into the new member list in April AR, with most being left out. (The list is updated on page 57. Ed.)

A reminder that the Division has a few copies of the last Australian Call Book. $8.50 to members plus $1.50 pack and post. If sent interstate make the post $2.00.

The State Government recently announced new pending law changes on the use of 'car phones' by the driver of a vehicle. From the first of July, only a hands free system is likely to be allowed for a driver using a mobile telephone. The announcement did not make the same reference to the use of a two way microphone, but the same conditions could apply. There is a $120 fine being considered. A few days later the Government made another announcement that computer 'hacking' would be outlawed with fines up to $50,000 and/or 10 years.

As part of the VK2 Historical records collection, Max Bowey VK2AFE has been appointed as the co-ordinator of Historical QSL cards, a similar appointment to that in the VK3 Division. Max may be contacted via the NSW office, preferably Friday when he is in the office.

The office hours are 11 am to 2pm Monday to Friday and 7 to 9pm Wednesday nights. (02) 689 2417.

WICEN exercises. Some coming events include 9th July - Amaroo; 13th August - City to Surf; 2nd September - Batemans Bay rally; 14/15th October - Hawkesbury - Canoe Classic. Check with your local group for regional/local exercises.

New Members

A warm welcome is extended to the following who were in the April intake.

E E Alfred	Assoc	Bayview
D E Braidwood	Assoc	Kareela
J I Brewster	VK2KOJ	Glendale
B F Carroll	VK2DEQ	Orange
J N Cassidy	VK2BCV	Nambucca Heads
G J Cogar	VK2XNK	Wollombi
W Connelly	Assoc	Mortdale
P A Frost	Assoc	Kalgoorlie
P H Hodges	VK2JR	Guildford
G Harrison	Assoc	Haymarket
B E Hutchinson	VK2YBE	Tamworth
S J Lange	Assoc	Springwood
T I Manley	VK2XAS	Chipping Norton
M Peterson	VK2KGM	Lakemba
D J Pola	VK2JDP	Bidwell
P G Tevah	Assoc	Auburn

NOVICE NOTES

A simple impedance bridge

Drew Diamond, VK3XU
"Nar Melan" Gatters Rd
WONGA PARK, 3115

The experimental amateur will often need to know the value of an impedance, such as that of an antenna, RF amplifier or other low power device. An SWR meter, in addition to poor sensitivity, can only show departure from match in terms of SWR, and gives no idea as to the value of the unknown impedance.

Here is a simple and cheap bridge which is useful for measuring resistive unknown impedances from about 10 ohms to 600 ohms over the 1.8 to 30MHz frequency range. The drive source for the bridge may be a very low power transmitter (about 10mW- more about this later), dip oscillator or signal generator if available.

Theory

This bridge is based upon the classic Wheatstone arrangement. See Fig. 1.

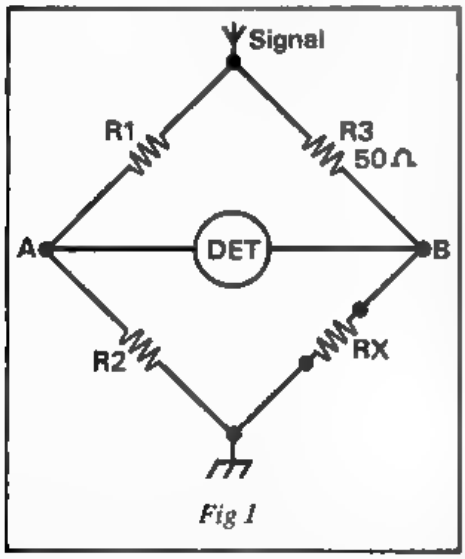


Fig 1

If R3 is made 50 ohms (the nominal input/output impedance of most radio equipment), and R1 and R2 are made equal in value, say 500 ohms each, then RX must be 50 ohms resistive for the bridge to be "balanced", i.e. there is no difference in potential between points A and B. Should RX depart from 50 ohms, then A and B will have different potentials, and the degree of departure will be indicated on the detector.

If R1 and R2 are combined in one potentiometer, our bridge will now look like this. See Fig. 2.

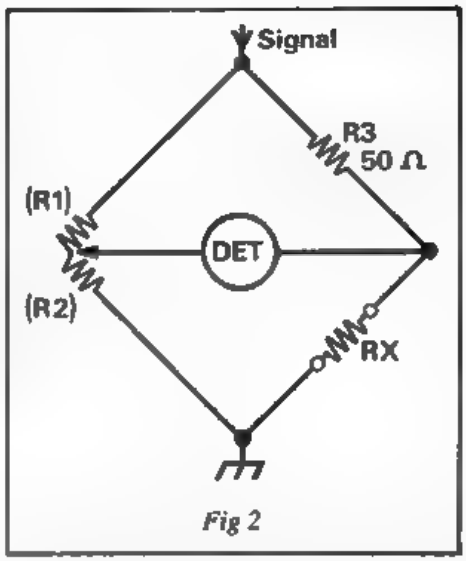


Fig 2

If RX is other than 50 ohms, it should be possible to balance the bridge with adjustment of the potentiometer. For example; if RX is 150 ohms, then (R1) would be 250 ohms, and (R2) would be 750 ohms. If the potentiometer has been previously calibrated in terms of resistance values, then the value of the unknown can be read or interpolated from the scale. A 1000 ohm potentiometer was chosen for this project, as these are not hard to buy, and the effects of stray capacitance within the potentiometer should not be significant - at least to 30MHz anyway.

The final practical circuit is shown in Fig. 3 R1 is a 51 ohm metal film 1/4W resistor; the nearest preferred value to 50 ohms. For clarity, a resistor is shown connected to the RX connector. Components C1, R3, C2 and M form the detector circuit. For sensitivity, D1 must be a germanium OA91 or similar. C1 and C2 are 0 01uF disc ceramic.

Construction

The bridge should be housed in a metal box. There are a number of ready made boxes available off the shelf. However, there is no need to go to great trouble or expense. The photos show my own bridge built into a tobacco tin measuring 9 x 5 x 2cm Layout is not very critical, but signal carrying connections must be kept as short as practicable. The meter should have a sensitivity of 250uA or less, preferably 100uA if available. There are small cheap meters around marked 'signal' or 'tuning'. These are generally 200 or 250uA fsd, which is adequate for this application.

Calibration

The bridge may be driven from a dip oscillator by coupling the signal via a two-turn link at the signal connector, or from a signal generator which can deliver about 10mW

The output of a transmitter must not be directly applied to the bridge unless the power has been attenuated to an appropriate level. A 20dB attenuator would permit 1W from a transmitter to deliver 10mW to the bridge input. A 20dB attenuator is shown in Fig. 4.

Obtain a range of metal film or cracked carbon resistors, from about 10 to 560 or 620 ohms, including a 51 ohm (nearest preferred value to 50 ohms). With about 10mW applied to the signal input, and 51 ohms at RX; adjust R2 for best null. Mark this point upon a card fitted under the pot nut. Repeat for as many resistance values as desired. Points at 10, 27, 50, 100, 270 and 560 ohms are suggested.

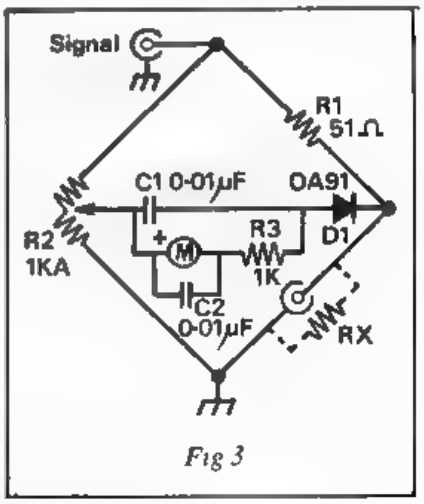


Fig 3

Uses

The main application would be for antenna impedance measurements With an appropriate frequency applied, the antenna

To Page 35

Report of the Fifty Third Annual Convention of the WIA

Bill Rice VK3ABP
Brenda Edmonds VK3KT

The convention, held at the Brighton Savoy Hotel Motel from 23rd to 25th April 1989, was opened at 9 am by the Federal President Peter Gamble, VK3YRP. For the first time the convention was recorded by video cameras and accompanying sound equipment.

In Peter's opening remarks he referred to an article by Jamieson Rowe, VK2ZLO, in a recent issue of "Electronics Australia", querying whether there is really much difference between amateurs and CBers! It was suggested that the activities of this Convention will clarify any differences.

The formal business of receiving and adopting last year's minutes, profit and loss account and auditors'report was rapidly completed. Twenty eight reports from office bearers, co-ordinators and Divisions were then received, discussed and adopted.

Highlights of Reports

In the President's Report, Peter Gamble, VK3YRP, referred to the administrative changes in the Executive office since the 1988 Convention. This has resulted in the WIA being more rapidly responsive to members' needs, but at the cost of many hours of hard work by the General Manager and his staff. Last year's election of several more interstate members to Executive had resulted in benefits but not without cost, particularly for transport. He also foreshadowed discussions on corporate planning, and liaison with IARU and DOTC.

David Wardlaw, VK3ADW, IARU Liaison Officer, summarised the year's activities on the International scene. One highlight was the election of Michael Owen, VK3KI, (now also G3ZML), to the position of Vice-President of the IARU. The Convention moved that a congratulatory letter be sent to Michael. Bill Roper, VK3ARZ, briefly introduced the Treasurer's report, the full implications of which would be discussed later in the Convention.

The Editor's Publications Committee report initiated brief debate on possible WIA/NZART publishing liaison, and also the absence of detailed Publications Committee terms of reference. The need for either has been overshadowed by rapidly changing events in both countries.

Ron Henderson, VK1RH, in the FTAC report referred to the resignation of Ray Roche, VK1ZJR, as FTAC chairman in February, and announced that Rob Milliken, VK1KRM, had accepted the position for the time being.

Standards, WICEN and Intruder Watch reports raised few comments, but Ron Henderson stated his intention to resign as WICEN Co-ordinator in the near future, thus there is need for a replacement.

Other reports presented were from the Contest, Awards and QSL Managers, the Historian, Videotape, Broadcast tape, International Travel Host Exchange and EMC Co-ordinators.

Brenda Edmonds, VK3KT, received a number of questions about examination devolvemen, in particular after presenting her Education co-ordinator's report.

Commenting on the ALARA report, David Jerome, VK4YAN, mentioned that 65 % of ALARA members are also WIA members, which is a gratifyingly high proportion.

VK3ADW presented the AMSAT report on behalf of Graham Ratcliff, VK5AGR, as both of them had represented the WIA at the AMSAT Colloquium in England last year.

More and more it is apparent that even the amateur satellite programs call for large sums of money, which must come from those who use the service.

Bill Roper, presenting the General Manager and Secretary's report, summarised the year in four words 'exciting, challenging, exhausting and frustrating'. George Brzostowski, VK1GB, moved an impromptu vote of thanks to Bill and the Assistant General Manager, Ross Burstal, VK3CRB, at the conclusion of Bill's report. This was carried with acclamation.

George, a little later, presented the report by the Future of Amateur Radio Working Party (FARWP). He noted that this group has progressed rather less rapidly this year than in its first year. There was considerable discussion on such things as the possibility of a "no-code" Novice licence, and the commercial phasing out of morse code.

Reports were then received from all Divisions. The only one which provoked much discussion was from VK6, which raised the sensitive topic of Local Government permission for antenna masts or towers.

Agenda Items

Before going on to discuss the agenda items the President, Peter Gamble, presented the Remembrance Day Contest Trophy to David Jerome on behalf of VK4, the winning Division in 1988

The remainder of Sunday afternoon was devoted to discussion of many of the agenda items. More or less in the order of presentation, these were on the subjects of packet radio planning, method of recognising 17th May as World ITU day, changeover of 28 MHz beacons to fewer channels and time sharing mode, and a proposal to employ only the initials "WIA" rather than the full name of the Wireless Institute of Australia in all correspondence and promotional materials.

A lengthy motion from VK1 recommended the application of commercial principles and engineering practices to all matters associated with repeater planning, siting and construction. This was carried unanimously.

Also there was unanimous support for seeking a frequency allocation for amateur TV purposes to replace the 50 cm band which is about to be resumed progressively for use by the Broadcast Service.

There was extensive discussion of the procedures for WIA provision of books and related services to members. The innovation last year of devolving the Magpubs operation to the VK2 Division was not entirely successful. Some alternative arrangements have been established, and are showing promise

An interesting proposal by VK5 was that JOTA activities, which have successfully used AUSSAT for the last two years, should be extended even further to the use of the RFDS outback radio network, thus enabling many more isolated young people to participate This motion was also carried A suitable foundation co-ordinator was nominated by VK5 Division

After discussion, it was agreed to integrate and rationalise the various Divisional and Federal methods of recognising service to the WIA, to allow for acknowledgement of volunteer efforts.

Agenda items which were referred to working parties included those on the 2m beacon sub-band and extended repeater

All photographs courtesy of John Friend, VK3ZAB.

1 VK1 delegates. (L to R) Alex Johnston, VK1ZDX; Rob Milliken, VK1KRM; Kevin Olds, VK1OK

2. VK2 delegates. (L to R) Roger Henley VK2ZIG; Terry Ryeland, VK2UX; Tim Mills, VK2ZTM.

3. VK3 delegates. (L to R) Peter Mill, VK3ZPP; Barry Wilton, VK3XV

4. VK4 delegates. (L to R) Ross Mutzelberg, VK4IY; David Jerome, VK4YAN; Murray Kelly, VK4AOK.

5. VK5 delegates. (L to R) Alan Mallabone, VK5NNM; Rowland Bruce, VK5OU; Bill Wardrop, VK5AWM

6. VK6 delegates. (L to R) Bruce Hedland-Thomas, VK6OO; Neil Penfold, VK6NE.

7. VK7 delegates. (L to R) Bill Bower, VK7AV; Joe Gelston, VK7JG.

8. (L to R) General Manager Bill Roper VK3ARZ; Assistant G.M. Ross Burstal, VK3CRB.

9. (L to R) Federal President, Peter Gamble, VK3YRP; Vice-Chairman, Ron Henderson, VK1RH.

10. (L to R) Editor AR, Bill Rice, VK3ABP; IARU Liaison Officer, David Wardlaw, VK3ADW

11. (L to R) Executive Members, Kathy Gluyas, VK3XBA; Bill Wardrop, VK5AWM.

12. (L to R) Executive Members, Brenda Edmonds, VK3KT; George Brzostowski, VK1GB

13. DOTC visitors, John Higginbottom, Alan Jordan, Colin Langby

14. Delegates at work, VK1 to VK4

15. Delegates at work, VK4 to VK7

16. General view including President's table

17. Peter Gamble presents the Remembrance Day Trophy to David Jerome (VK4 Federal Councillor)

18. A smile of Divisional pride! by VK4.

sub-band, also band plans in general, celebration of the WIA 80th birthday, "Family Membership", three motions on membership grades, advertising commissions, recruitment incentives and contest guidelines.

A very important item debated at length, on Sunday and Monday, by the Working Party responsible for financial matters was the proposal that uniform membership conditions, including subscriptions, should apply to all Divisions. Agreement was eventually reached (see box).

Corporate Plan

Several hours on Sunday night were occupied by a presentation on modern management procedures and their relevance to the future of the WIA, given jointly by Peter Gamble and Ron Henderson. This began with the article "Why Corporate Plan?" on p 29 of April AR, and extended the theme to a consideration of organisational shortcomings, possible remedies, membership statistics and financial constraints, thereby providing a foundation for Working Party discussion.

Agenda Items Continued

The earlier part of Monday morning involved discussion of issues to be raised with the DOTC representatives scheduled to visit the Convention before lunch. The remaining time before their arrival was occupied, among other things, by the Federal Awards Manager, Ken Gott, VK3AJU with his proposal for an Antarctic Award. One of the other items was a motion to seek creation of a VHF Novice licence grade involving no Morse exam. Another was towards preparation for and funding of amateur representation at the next WARC and similar planning conferences.

DOTC Visitors

The three representatives from DOTC, two of whom spoke to the Convention, were Alan Jordan, (Manager, Regulatory), John Higginbottom, (Director, Interference Task Force) and Colin Langtry, (Senior Engineer, Spectrum Planning).

Colin discussed the evolution of Departmental organisation to satisfy the spectrum plan, band plan and frequency assignment sections of the Radiocommunications Act. Currently this includes planning for Preparatory Group, ITU Plenipotentiary, and ultimately WARC meetings. The emphasis at WARC is expected to be on frequencies between 1 and 3 GHz, and he specifically indicated that where amateur bands are involved, the WIA will be invited to participate. Colin also referred to new modes and systems being introduced by commercial users in the VHF/UHF spectrum, such as amplitude-compandored SSB, paging systems, spread-spectrum, multipoint distribution, pay television and electronic news gathering.

John Higginbottom then covered the new basis of interference investigation procedure by the Department and the intention to introduce a fee of $60 for diagnostic service or advice. This will be introduced later in 1989 after the publication of a descriptive booklet aimed at helping householders diagnose their own interference problems and take appropriate action, such as calling the TV serviceman or the power supply authority. DOTC will provide diagnostic advice to these groups if required. The importance of appliance immunity would be emphasised by the Department when applicable.

Although Alan Jordan did not speak formally, he was available for informal discussion both during and after the lunch break.

Executive Restructure

Resulting from the Corporate Plan discussions on management and organisational shortcomings it was proposed that Executive should be restructured to make it more fairly representative of all Divisions and also able to invoke more rapid guidance by Council. The proposal was that Executive should be expanded from a President plus nine members to a President plus twelve members, including all seven Federal Councillors. This expanded Executive was to meet quarterly, thus eliminating the need for an annual Federal Convention. After a short debate the motion was carried unanimously.

Final Day

Minor items which were considered on Tuesday morning (Anzac Day) were updated terms of reference for the Publications Committee, authorisation to establish a fund to support WIA participation in international conferences, recommendations regarding modifications where necessary to existing band plans and changes to the Federal Contest Manager's terms of reference. Working party recommendations were accepted on the 80th anniversary celebrations and the future of Mag Pubs.

By far the greatest amount of time and discussion throughout the Convention was on the topic of uniformity of subscription fees, their level, and the pros and cons of providing concessional rates to any group of members. This was further debated on Tuesday, in spite of prior agreement, as several details needed clarification.

Election of Office Bearers

Provisional appointments to the newly structured Executive, including Divisional Councillors, were as follows:

* Federal Pres.	Peter Gamble VK3YRP
* Vice Chairman	Ron Henderson VK1RH
* Federal Treas.	Kathy Gluyas VK3XBA
* Editor	Bill Rice VK3ABP
* ACT Division	Kevin Olds VK1OK
* NSW Division	to be advised
* Vic Division	Peter Mill VK3ZPP
* Qld Division	David Jerome VK4YAN
* SA Division	Bill Wardrop VK5AWM
* WA Division	Neil Penfold VK6NE
* Tas Division	Joe Gelston VK7JG

* George Brzostowski VK1GB
* Brenda Edmonds VK3KT

Some of these nominations are subject to amendment of the Articles of Association to increase the number of directors of the company from 9 to 12.

The last items of formal business were the re-appointment of the auditors, Touche Ross and Co., and the fixing of meeting [illegible].

The closing of the Convention, which was video-recorded, included a very brief address by each of the Federal Councillors or delegates, and a statement of achievement by the President. It was made clear that this convention was almost certainly the last one of its type to be held.

CHANGES TO MEMBERSHIP ARRANGEMENTS.

In order to compensate for previous subscription increases not having kept pace with CPI changes in recent years, a complete review of membership subscription structure was seen to be necessary.

Conclusions finally reached and accepted were:-

*** that subscriptions should be the same in all Divisions;**

*** that Council at its discretion may grant a concession of around 20 % to financially disadvantaged members; * that the recommended subscription rate from 1st July 1989 be set at a Divisional component of $23 (subject to Divisional ratification) and a Federal component of $47; * that subscription rates be adjusted annually in accordance with the CPI, such adjustment to be made on the 1st July each year using the statistics for the March quarter.**

From Page 30

is connected to RX and R2 adjusted for best null. An antenna which presents 50 ohms resistive at the equipment end of the feedline will naturally read 50 ohms. If a deep null is not obtained, or other than 50 ohms read, the frequency can be experimentally changed up or down to determine what adjustment must be made to the antenna to obtain the correct impedance.

To check the characteristic impedance (Zo) of a length of coax line (3m or more); connect one end to RX, and terminate the far end of the line with a non-inductive resistor of what is supposed to be the line impedance, e.g. 51 ohms. Set the signal frequency to say 3.5MHz. The bridge should balance at 50 ohms. Now change the frequency to 7MHz, then 14MHz. The bridge should balance perfectly at all frequencies if the line is terminated in its Zo.

The great advantage with this bridge is that only a small signal power is delivered to the load at RX, so when antenna measurements are being made, only a very small signal is put to air. In addition, when measuring the input impedance of a low power device, such as an amplifier, it is unlikely that any damage will be caused to the device under test.

References and Further Reading

1. Solid State Design - ARRL.
2. Radio Handbook - Wm. Orr.

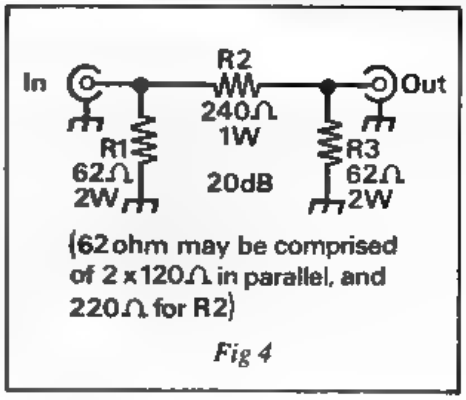
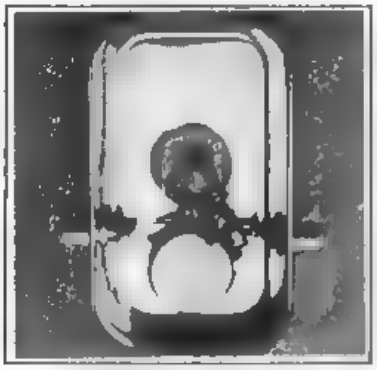


Fig 4



Internal construction

Front Panel

CONTESTS

Novice and Sprints Rules – Field Day and Ross Hull results

Federal Contest Manager
Frank Beech VK7BC
37 Nobelius Drive
Legana, 7277

Contest Calendar

MAY

13 — 14 USSR CQ M Contest
27 — 28 LABRE World Telecom Day Contest (unconfirmed).

JUNE

17 — 18 WIA, Australian Novice Contes (Rules this issue).

JULY

1 — 2 Venezuelan Independance Day Contest (phone section)
29 — 30 Venezuelan Independance Day Contest (CW section)
1 Adelaide Hills ARS Inc Australasian Sprint (CW) rules this issue
8 Adelaide Hills ARS Inc. Australasian sprint (phone) rules this issue.

REMEMBRANCE DAY CONTEST 1988

Mr Murphy called at my QTH during the typing of the 1988 results and of course it was only after the results had been published that his handiwork became apparent. My apologies must go to Barry Mitchell VK6AVO, the top scoring HF phone station in the Western Australian division, who I listed as VK6AYO. Your certificate is on its way.

In next month's VK Novice Contest you will notice two small changes to the rules that should encourage more activity from Novice stations, I have made these changes to try and stem the steady fall in participation that has occurred over the past few years.

The first is to allow REPEAT contacts after a 12 hour period, on each band, and the second is to reintroduce certificates to the top scoring Novice station in each call area. Please check your entries with care, and enjoy the contest.

Next month I will detail the rules for the Venezuelan contest. In addition to the usual certificates for top scorers, certificates will be forwarded to those participants who, make more than 10% of the score reached by the winner in the same class. This will encourage more of use to send the entry off to YV land.

VK NOVICE CONTEST 1989 RULES

CONTEST PERIOD. From 0800 UTC June 17th 1989 until 0800 UTC June 18th 1989.

OBJECTS OF THE CONTEST: To encourage contest operation of amateur radio stations in Australia, New Zealand and Papua New Guinea, with special emphasis on contacts with Novice and radio club

stations.

STATIONS ELIGIBLE: Only stations in VK, ZL and P2 call areas may enter. No stations outside these call areas are permitted to be worked or entered in a log for the purpose of this contest. Except for club stations, no multi operator working is allowed. Stations in the same call area may contact each other as well as stations in other call areas

CONTEST BANDS: All operations must be confined to within the Novice frequency sub band allocations in the 10, 15, and 80 metre bands. No cross band operation is permitted Novice allocations VK HF; 3.525-3.625 MHz, 21.125-21.200 MHz, and 28.100-28.600 MHz.

MODES OF OPERATION: Only phone or CW may be used. In the CW mode, operation must not exceed 15 words per minute.

CONTEST SECTIONS: Section (a) Phone - Novice/Full call.

Section (b) CW - Novice/Full call.

Section (c) SWL.

SCORING: For contacts with a novice station - Five points.

For contacts with a club station - Ten points.

For contacts with a Full call station - Two points.

Listener section;

For Novice to Novice contacts - Five points.

For Novice to Full call stations - Two points.

For Full call to Full Call stations - Two points

For any contact with a radio club - Ten points.

CALL PROCEDURE: For phone stations, call CQ NOVICE CONTEST.

For CW stations, call CQ N.

CONTACTS: Any station may be contacted TWICE per band, provided a period of at least 12 hours has passed after the first contact.

NUMBER EXCHANGE: Section (a), On phone, stations must exchange a serial number comprising an RS report followed by three figures. The figures must commence at 001 for the first contact and increase by "one" for each further contact.

Section (b), For CW stations, as for phone but the report is an RST followed by the serial number

LOG ENTRIES: Each log should be laid out such as to provide columns in the order given as follows;

Date/time UTC. Band. Mode. Station contacted. Report and serial number sent. Report and serial number received. Claimed score. Each log sheet must be endorsed at the top "VK Novice contest 1989".

Total claimed score for each page must be shown at the bottom of the page.

FRONT SHEET: A front sheet must be attached to the contest log and must carry the following information:

Name and address of operator. Call sign. Station location. Section entered. Score.

DECLARATION: The front sheet must also carry a declaration which states:

I hereby certify that I have operated within the terms of my licence, and the rules and spirit of the contest... This declaration must be followed by the signature of the operator.. with date.

In the case of a club station, the entry must be signed by a responsible officer of the club committee or a licensed operator delegated by the committee to do so. In the case of multi operator stations, the call signs of participating operators must also be shown on the front sheet.

REGULATIONS: All stations participating in the contest must be operated within the terms of the station licence and applicable regulation.

ENTRIES TO: Logs are to be forwarded to "The Federal contests manager". Entries must be posted so as to reach the contest manager no later than July 20th 1989. The address for entries is: Federal contests manager, Frank Beech VK7BC, 37 Nobelius Drive, Legana, Tasmania 7277. Envelopes are to be endorsed "Novice contest".

CERTIFICATES: Certificates will be awarded to the top scoring stations in each section at the discretion of the Federal contest manager.

Certificates will also be awarded to the top scoring Novice station in each call area.

And to any other entrant where meritorious operation has been carried out in the opinion of the contest manager.

TROPHY: The KEITH HOWARD TROPHY VK2AKX will be awarded to the Novice entry with the highest aggregate score from both the Phone and CW sections of the contest. This trophy is a perpetual trophy and will be held by the winner until such time as it is awarded to a winner of a subsequent Novice contest. Should two or more aggregate scores be equal, a decision will be based on a count back as to the greater number of novice stations listed in each log entry. Should such a count also be equal, the log containing the greatest number of CW contacts will be preferred. In the event of a further tie, under these rules the logs will be placed before a committee which will exercise a vote as to the neatest and most meritorious entry.

OPERATOR: A person may only submit one contest log per mode.

Logs for entries where an operator uses more than one call sign whilst operating in this contest will not be accepted.

DISQUALIFICATION: The contest disqualification criteria as published annually in "Amateur Radio" will apply. Any station observed during the contest as constantly departing from the generally accepted code of operating ethics, may also be disqualified.

Note. See August issue of "Amateur Radio" for the disqualification criteria. Note also, "Contacts" now twice per band.

AUSTRALASIAN SPRINTS CW AND PHONE JULY 1989

The Adelaide Hills Amateur Radio Society Inc is again pleased to announce the Fourth Annual Australasian Sprints, to be held during July 1989.

These one hour duration contests for CW and PHONE Operators on 80 metres were previously known as the National Sprints and under the new name of the Australasian Sprints invite the participation of all Operators in VK, ZL and P2 call areas. As in the 1988 Contest, a section is open to SWLs. The Australasian Sprints are endorsed and co-sponsored by the South Australian/Northern Territory Division of the Wireless Institute of Australia and the Adelaide Hills Amateur Radio Society, and Certificates and Trophies will be awarded to area winners and overall winners

A simple reason is behind the concept of the Australasian Sprints. Most contests are long, rules are complex, and participation, except for serious contesters, diminishes yearly thus discouraging many operators from participating.

The Australasian Sprints, being only one hour duration, are short, sharp and simple, providing a busy hour of often frantic operation thereby providing a significant operating contest challenge to the general amateur.

OBJECT OF THE SPRINTS:

The Operator's basic goal in the Sprints is to make (and SWLs to hear and log) as many contacts as possible without duplication during an hour of operation on a single band. Any contact with a VK, ZL or P2 station on 80 metres during the contest period can be counted, but a station may be claimed only once.

ELIGIBILITY: The Australasian Sprints are open to all licensed amateurs, or group of amateurs, using a single call sign, e.g club stations, or, anywhere in the VK, ZL and P2 call areas.

CONTEST PERIOD: 1200 to 1300 UTC, July 1, 1989 (CW only)

1200 to 1300 UTC, July 8, 1989 (Phone only any, any legal mode)

FREQUENCIES: For the CW Sprint, frequencies between 3.500 and 3.700 MHz may be used.

For the Phone Sprint, frequencies between 3.535 and 3.700 MHz may be used.

CONTEST CALL: CQ Sprint or CQ test or CQ Contest.
EXCHANGES: Minimum exchange for a valid contact will consist of a signal report and a three digit serial number. The serial number may start at any number between 001 and 999 but will revert to 001 if 999 has been reached.
LOGS: Contest logs must show for each contact the time (UTC), callsign of station worked, (both callsigns for SWLs), report/serial number given and report/serial number received. Each log must be accompanied by a cover sheet showing the name and date of the Sprint (CW or Phone), the total number of contacts claimed, and a statement that the Operator(s) has abided by the rules and spirit of the contest. This cover sheet is to be signed by the operator(s) and personal callsigns added where multi-operators enter using a club callsign. Any special conditions such as QRP or mobile operation should be mentioned in the statement. Any comments you wish to make will be welcomed by the Sponsors.

Logs are to be in the hands of the AHARS no later than Friday August 11th, P.O. Box 401 Blackwood SA 5051, Attention Contest Manager, and the envelope is to be endorsed CW, Phone, or SWL Sprint.
AWARDS: Certificates will be awarded to the highest scorer in each VK, ZL and P2 call area for both the CW and Phone Sprints. Trophies will be awarded to the outright winner of each section CW and Phone Sprint. Certificates may be awarded to other operators whose performance was, in the opinion of the Sponsors, exemplary.
SWLs: Certificates will be awarded to the highest scorer listener log in the VK, ZL and P2 call areas for both the CW and Phone Sprints.

Any entry which is clearly in violation of the rules or spirit of this Contest or which contains an excessive number of claimed duplicate contacts (this does not refer to duplicates which have been indicated as such and are not claimed), may be disqualified. The decision of the Adelaide Hills Amateur Radio Society Inc. in respect the interpretation of these rules, granting of awards, and disqualification will be final.

This Contest is recommended as a good Saturday evening entertainment, and has a growing response each year. If you have never entered a Contest before, here is a good place to start. Be in it and enjoy the fun ar

Trial national VHF/UHF field day contest January 1989. Results

Section (A) 12 hour period
Category (a) Single operator Single band.

VK4NEF	QG61	936 points	2m
VK2EMU	QF55	32 points	2m

Category (d) Home station.

VK5NC	QF02	702 points	6/3. 144/8. 432/5
VK5NY	PF94	570 points	6/12. 144/14. 432/6.
VK4KZK	QG62	256 points	144/16. 432/8.

Section (B) 24 hours
Category (a) Single operator single band.

VK3BBB	QF31	1260 points.	144/51
VK3YSY	QF33	1080 points	144/
VK2EZF	QF56	44 points	144/
VK3ANP	QF33	10 points	144/

Category (b) Single operator all band.

VK3XEX	QF12	5904 points	6/43. 144/26. 432/6
VK3ZJC	QF32	4880 points	6/8. 144/26. 432/13. 1296/9.
VK3XRS	QF31	3336 points	432/23. 1296/15
VK4AIZ	QF53	310 points	144/17. 432/6.

Category (c) Multi operator.

VK3ATL	QF11	25, 632 points	6/66. 144/68. 432/41.
VK5BW	PF94	13, 884 points	6/44. 144/53. 432/27.
VK4IZ	QG63	5824 points	6/39. 144/96. 432/21.

Category (d) Home station all band.

VK5LP	PF94	450 points	6/10. 144/11. 432/12
VK4IS	QG63	260 points	144/26. 432/13.

Please note, the Maidenhead locator indicators following the callsigns are those used during the period of the contest and may differ from the indicators normally used by the station concerned.

The response to the contest has been satisfactory when the lack of advanced publicity is taken into account, I must take the blame for this, if the contest is to continue the necessary advanced publicity will be arranged and with a little bit of luck should appear in at least three magazines. Now for some comments from those amateurs who participated.

..I operated from Mt Baw Baw (north of Moe) on all four bands. Unfortunately, I wasn't feeling very well and made a late start and an early finish, and I didn't work very hard at it when I was on! Ah well, that's the way it goes. But still a most enjoyable field day, although I did learn that I need to upgrade the sleeping comfort in my 7 seater van. To the best of my knowledge, I was the only VK3 station to use all four bands. Six metres was very quiet — hardly worth the effort, with only one other portable station heard. The higher bands were quite active, especially 1296, with a total of about 10 stations active, of which 3 were portable. This was very encouraging, and hopefully will pave the way for 1296 to be reinstated in the Ross Hull contest. The scoring system was good, even though it still used the locator squares. Having to work each square on each band created more activity and the band multipliers helped too. It was a definite improvement on the Ross Hull rules. So all in all I feel it was most successful, and there should be at least one more of them. A good time would be Easter, although it would clash with the John Moyle field day. I just wonder though whether it would be better to convert the John Moyle field day to HF only (it's pretty close to that now), and run a VHF/UHF field day as well at the same time It would also be good to keep it synchronised with the NZART field day as you've done this year. Speaking of NZART, if they decide to run a field day again in December as they did last year, I'd very much like to see one of ours occurring at the same time Thanks again for an enjoyable field day, and I hope you get a mountain of logs...VK3ZJC.

It was suggested that the starting point might be within a period in which the best

24 hours score could be entered. This would save the VK6's starting at 10am AESST. Because of the extreme temperature last weekend (42 in the tent) consideration might be given to holding the event in mid-December, which might also result in improved Es propagation. We felt the system of calculating the multiplying factor might be improved if the multipliers were kept to the band in which they are worked, and not the overall score. Under the present rules if a grid square is worked on each band ie 6m, 2m, 70cm, 21cm, then it effectively counts as 4 multipliers. We included satellite operation during the weekend and secured a few contacts. We believe this is within the rules because they are not terrestrial repeaters, and not really cross band, as all operators use the same up link band. We were unanimous in our belief that the contest was well worth participating in, and not only promoted the use of VHF/UHF bands but also fellowship between members of our club ...VK3YXK for Geelong ARC.

Many thanks for organising the VHF/UHF National Field Day. It was a real pleasure to operate at long last in a National VHF/UHF Field Day. Although temperatures around Adelaide were over 40°C on Saturday it did not deter us from the contest, although we believe it did deter others from the field. Also, I was asked frequently "what field day?", or "is this the John Moyle?" or "is the contest sponsored by the WIA?" This illustrates to me my thoughts over the past 10 years or so, noting the very low priority given to national WIA contests in both "Amateur Radio Magazine" as well as the WIA News Broadcasts. There is absolutely no differentiation between these and other "insignificant contests" eg Bulgarian Contest. It seems the days are long gone where a WIA contest, eg the John Moyle Field Day is proudly announced on a page devoted ENTIRELY to that contest, rather than being hidden amongst all sorts of odds and sods. Sorry, but there will not be a log from me in this year's John Moyle, two field days within 6 weeks is simply beyond my capacity, and certainly that of the XYL...VK5BW

It was unfortunate conditions were so poor due to the very hot weather. This particularly affected the 144 and 432 contacts. I did not hear any stations from VK3 although I tried. The following weekend there were good tropo conditions, so you can't win! I hope you received the support you were looking for in the contest. There did not seem a great deal of enthusiasm in VK5 but then it was so hot one could not expect people to swelter in a caravan or tent. However, the heat did produce some Es contacts on six metres which was a help...VK5LP.

I expect my total claimed score will be one of the smallest submitted. However, I'm still submitting my entry because I believe that a VHF/UHF portable contest like this one is a great idea and will be better supported in future, when through publicity and growth of activity, more amateurs will find it interesting and challenging. At least that's what I hope! The publicity shortage is added to a generally and disappointingly slack local VHF scene. VHF/UHF DXing can be so much more than keying up distant repeaters, yet only a few seem to be interested in more than that. The net channel mentality and commonly accepted emetic operating practice are quite deterrent to the serious type of operator. To me, it's all evidence of the slow ageing and deterioration of our hobby as a whole, and our society at the same time. Thanks for initiating this new contest. You've got my future support, and I will be doing what I can to encourage other local amateurs to try this beaut experience of VHF/UHF portable hill top operating for themselves...VK4AIZ.

Frank, just a few points that we thought might improve the contest.

1. Repeat contacts each hour as the contest tended to be very slow and to become boring.

2. Some clarification as to what modes are to be used and whether separate logs for each band and mode are wanted.

3. Multiplying for greater distance as per rules of John Moyle contest (FCM). Apart from that, it would have been good to see more field portable stations working the contest. We would like to thank VK4NEF and VK4AIZ who were about the only three stations, apart from ourselves, working the contest....VK4YZ for Redcliff RC.

I enjoyed the contest very much, I had to work on Sunday so only operated in the 12 hour section, spent a couple of weeks manufacturing a hinged base plate for the mast and using a 3 to 1 pulley system to pivot the mast to vertical. My beam was at 10 metres and 2m vertical at 12 metres. Beam was 12 element on a 6 metre boom. A few of us in SE Queensland reckon that FCM's and WICEN exercise planners organise activities on weekends that it rains, it's half the fun of setting up whilst it rains and also dropping the antennas and packing up whilst it rains. Shhh! FCM. I did not hear any activity during the Ross Hull contest up here in Brisbane, it might be run over too many days. This national VHF/UHF field day contest over 12/24 hours portable is a very good idea, but maybe not on a long weekend though. I hope to compete again next year....VK4NEF.

Where was everyone? I hope the response from the rest of the country was better. Despite this I am looking forward to next year's VHF field day already...VK2EZF.

The top club station is the GEELONG ARC VK3ATL/P with 25,632 points.

Certificates will be forwarded to the remainder indicating score and Field position.

I must thank all those who participated in the trial contest, your support and comments will be sufficient encouragement for me to endeavour to place this before federal council with the hope that it can become an annual event...FCM.

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Ross Hull Memorial Contest 1988 Results

Station	Contacts	Squares Worked	Total Score	Locator Square
VK5NC	267	52x50	2867	QF02
VK3XRS	290	50x50	2790	QF32
FK1TS	60	32x50	1660	RG37
VK3AOS	67	24x50	1267	QF12
VK4KHQ	38	21x50	1088	PG99
VK3AUG	102	15x50	852	QF21
JH1WHS	43	14x50	743	PF94
VK3DLM	108	11x50	658	QF21
VK3VF	26	9x50	476	QF21
ZL1TZA	13	9x50	463	RF72
VK4IY	8	5x50	258	QG62
VK3ANP	3	3x50	153	QF33

The entries for this contest came from 7 locator fields, 3 of these fields are overseas, namely RF, RG and PM. Japan, New Caledonia and New Zealand. The winners in each locator field are as follows:

Locator Field	Station	Score
PF	VK5LP	743
PG	VK4KHQ	1088
PM	JH1WHS	676
QF	VK5NC	2867
QG	VK4IY	258
RF	ZL1TZA	463
RG	FK1TS	1660

In addition to the seven certificates issued to the Field winners, a perpetual trophy is awarded annually for competition between members of the Wireless Institute of Australia. The winner's name is engraved on the trophy and the winner also receives a suitable certificate. The entrant with the highest overall score for the contest will be the winner and their division will hold the trophy for one year.

Once more this trophy has been won by Trevor VK5NC who must be congratulated for his excellent performance and Roger, VK3XRS deserves our thanks for providing Trevor with some stiff competition.

Looking at the results it becomes apparent that the stations that spent time looking around the bands for the extra Maidenhead locator square in addition to working the stations in the more populated areas have reaped the reward. Both VK5NC and VK3XRS logs contained a good mix of 52, 144 and 432 contacts.

A number of stations have queried the rules, namely rule 3 (Bands) 52, 144 and 432 MHz. The 52 MHz, as inserted in the rules meant 52 and not as some thought 50-52, this was to remind contestants that in vast areas of VK it is illegal to operate on 50 MHz within television transmitting hours.

Radio Sport Federation of the USSR

Peace to the World International HF DX Contest

(CQ M DX Contest)

Each May the Radio Sport Federation of the USSR promotes the International Short Wave Radio Communication Contest "Peace to the World".

This year the contest will be held over the 24 hour period from 2100 UTC 13 May 1989 to 2100 UTC 14 May 1989. Amateurs and SWLs all over the world are invited to participate. A booklet recently received by the WIA Executive Office not only extends this invitation and includes the relevant rules, but also lists all participants and their scores in the 1988 contest. Those of most interest in our area, ie the VK-ZL-Oceania participants and their scores, together with the top world scores in each category are listed here after the rules.

Rules for 1989 CQ M DX Contest

1.Contest Period: 24 hours from 2100 UTC.
Saturday 13 May to 2100 UTC Sunday 14 May 1989.
2. Modes: CW, SSB and mixed.
3. Bands:1.8, 3.5, 7, 14, 21, 28 MHz and via amateur satellites.
4. Categories:
A - single-operator, single-band (mixed only)
B - Single-operator, multi-band (CW, SSB, mixed)
C - multi-operator, multi-band, single-transmitter (mixed only)
D - SWLs (mixed only)

- Club stations are automatically in category C.
- Only one signal is allowed at any time from the same station on any one band
- A station must operate at least 10 minutes on any band before changing to another band.
- A station may be worked only once on each band, CW, SSB and mixed.

5. Exchange: RS(T) plus QSO number, eg 59901 or 599001
6. Scoring: A QSO in the same "R-150-S" country counts one point, between different countries two points, between different continents three points. Listeners score one point for logging one exchange, three points for logging both.
7. Multipliers: The multiplier is the number of countries worked on the "R-150-S" list. One's own country does not count for multiplier credit. Listeners cannot claim multipliers.
8. Final Score: is total QSO points from all bands times total multiplier.
9. Logs: Send logs by 1 July 1989 to:
CQ M DX Contest
PO Box 88 Moscow
USSR.

1988 Results (VK-ZL-Oceania)

Callsign	Category	Total	No QSOs	No Pts	Mult
Australia					
(1) VK4TT	14 CW	4617	82	243	19
(1) VK2ENU	14 SSB	378	14	42	9
VK8BE	21 CW	195	13	39	5
(1) VK4KWO	21 SSB	4680	78	234	20
(1) VK3PJB	28 SSB	96	8	24	4
(1) AX4XA	B CW	18642	162	478	39
(3) VK5BS	B CW	938	24	67	14
(1) VK2AYK	B SSB	4844	58	173	28
VK2PT Check log					
New Zealand					
ZL3AGI	14 CW	3270	75	218	15
(2) ZL2AGY	B CW	4450	60	178	25
ZL2AAI and ZL3NS check logs					
Christmas Island					
(1) VK9XT	B Mix	107680	458	1346	80
Papua New Guinea					
P29HS	B CW	105	7	21	5
Tonga					
(2) A35AS	B Mix	48972	394	1166	42
Hawaii					
(1) WH6BUV	21 CW	2184	52	156	14

(1), (2), (3) Continental winner (or place-getter in relevant category)
The trophy winners (ie world top scores in relevant category) were:

Cat B CW	RL7AB	803512 points
Cat B SSB	UC2OR	846216 points
Cat B Mix	HAØMM	828240 points
Cat C Mix	Y34K	1532832 points

In category A, on the bands used by VK-ZL entrants, the world top scores were:

Band	CW	SSB	Mixed
14	RB5GW 187810	RB5LL 156480	I2UIY 254265
21	UWØLT 174155	UA9YP 116316	UAØTO 179208
28	UJ8JCM 17248	ZY5EG 129948	RI8BQ 46112

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EDUCATION NOTES

On-Air Training

Brenda Edmonds VK3KT
PO Box 883
Frankston 3199

Code Practice

About this time last year I wrote about the various on-air training sessions,and requested information about any others of which I was not aware.

I was pleased to receive some further information to pass on to readers.

The VK6 Division using the callsign VK6WIA runs two sessions; one on 3.555 MHz from 1200 to 1300 hrs GMT every evening except Saturdays and one on 146.700 FM via Channel 2 repeater VK5RAP, Monday to Friday 1130 to 1200 hrs GMT. Neither session operates on Public Holidays. The HF session is in two segments, 5-12 wpm and 14-20 wpm. The VHF runs at 5-12 wpm.

For some years now VK3COD has been running sessions every week night on 28.340 MHz and 147.425MHz. The code is sent in 5 minute segments with readback after each segment. Speed is 5wpm from 8.30 to 9.00 pm (VK3 time) and 10 wpm from 9 to 9.30 pm.

Both nets are happy to have further participants.

As I said last year, I would be pleased to hear of any other practice sessions, as I feel that this information should be made available in the interest of attracting new licensees. I would like to be able to include a comprehensive list in the next Callbook or in the Reference section in next February's AR.

Schools

Another set of records I would like to update is my list of schools which are operating their own stations. I know these change frequently as licensed staff members move and that the Callbook information does not indicate which calls are active. But if there are amateurs devoting time and energy to providing radio experience and instruction to school students, we should be supporting them to the best of our ability. I would be very pleased to hear of these groups and to receive their ideas on the type of support they need.

Some of these groups may be interested in participating in the Solar Terrestrial Energy Project, which will run from 1990 to 1995 as an international research program in a time of intense solar activity. The La Trobe University Ionospheric research unit is hoping to involve schools in a number of activities during the project. I hope to have more information about the project and possible activities int he near future.

Devolvement

Examination devolvement is still moving slowly. At the recent Joint Meeting with DOTC we were told that the expectation now is that next February's examinations will be the last to be run by the Department. An Examinations Officer has been appointed, with whom the WIA has been in communication, but there is still considerable amount of work to be done.

There is no intention to release any of the question bank material until the whole system is complete.

Neither is there any provision for assistance with production of papers other than from the question bank. If a paper is rejected, a short comment sheet will be attached, but no move will be made to rectify its weaknesses.

Those who originally submitted requests for accreditation should by now have received a letter from DOTC requesting confirmation of their continuing interest.

Strictly speaking, it will be the question paper that is accredited, not the body setting or marking it.

I hope that the long delay has not meant that intending examiners have lost interest.

My best wishes to those sitting the May exams. Remember, READ THE QUESTION, and ALL the answers.

73
Brenda VK3KT

AWARDS

CQ Award Managers:

Ken Gott VK3AJU
38A Lansdowne Rd
St Kilda 3183

Clubs, Zones, and Groups

Soon, if not already, I hope that all managers of awards issued by VK divisions, zones, clubs and other groups will have received a questionnaire and SASE from me seeking data on their awards.

The mailing is to all managers of awards listed in the 1985-86 WIA Callbook (the last such listing available), plus managers of new awards noted in AR since then.

The returns should enable me to compile an up-to-date list of VK awards, with current addresses of managers, rules, costs and so forth.

I hope that the WIA will then be able to publish a list of VK awards, either in the next Callbook or in its next information supplement (see January 1989 AR).

The returns will also enable me to answer enquiries from overseas amateurs and SWLs who write to me for information on VK awards.

Some have turned to me after receiving no responses from award managers to whom they have written. I must confess that I have had the same experience of returned or unanswered letters.

Naturally the WIA federal awards are being administered efficiently (hi! hi!), and I'm confident that the same is true of ones run by the VK divisions. However, without wanting to prejudge the results of the sur-

vey I have launched, I suspect that some of awards listed in the 1985-86 Callbook are as dead as the dodo.

They say it is easy to become a publisher, but very hard to remain one. The same may apply to awards. It's fairly easy for a club to start one in a spirit of enthusiasm. Over the years, the original enthusiasts may have departed or dispersed, or maybe the supply of certificates has run out and there are no funds for a new print run.

Even if everything is in order, the award can hardly be a useful operation if amateurs and SWLs are getting no response to enquiries about it because the address is out of date.

Award managers, including those running club awards, should not underestimate the overseas interest in VK awards. This may suggest to some clubs and groups that they should look at the DX bands for their nets if they have been confining activities to 80 m.

Recently I've received or noted three overseas books listing amateur awards (G1TZU's book in February, G4FAM's in March, and YB0WR's below).

Since then I've been approached by another entrepreneurial amateur, this time in the USA, who is planning a bigger and better compendium than any of the above.

I've supplied him only with information which I'm convinced is accurate and up-to-date, and have promised him more when my questionnaires are returned to me.

If you are managing an award and have not received a questionnaire about it, please let me know.

Council of Europe Award Change

You have until June 1 to win the Council of Europe Award with a certified log extract of QSOs with stations in the present 21 member countries of the Council, plus TP4OCE, operated by the Council of Europe ARC.

After that you will need to contact 23 countries, because Finland and San Marino become Council members in May.

To mark the Council's 40th anniversary, TP4OCE will operate on SSB 3.785, 7.090, 14.200, 21.310, and 28.450 MHz from 1600 on May 5 to 0400 on May 6, 1000-1600 May 6 to 0400 May 7, and 1000 to 1600 May 7.

CW frequencies are 3.515, 7.015, 14.015, 21.015, and 28.015. Times are 0400-1000 May 6, 1600 May 6 to 0400 May 7, and 1000 to 1600 May 7.

If AR hasn't reached you by those dates, TP40CE will have other regular skeds on October 22 and I asked its manager to give me longer notice of these .

The normal award costs US$9 or 16 IRCs and its manager is Francis Kremer F6FQK, 31 rue Louis Pasteur F-67490 Dettwiller, France.

Member states of the Council, as of June 1, are:

CT, DL, EA, EI, F, G, HBO, HB9, I, LA, LX, OE, OH, ON, OZ, PA, SV, SM, TA, TF, T7, 5B and 9H.

Novice Status No Barrier to DXCC

Recently I had the pleasure of issuing WIA DXCC certificate No. 366 to Robin VK4KRP who made application with an initial tally of 153 on phone. It was a very high score for a first application and I noticed that all QSOs had been made on 21 and 28 MHz since March 4, 1987, meaning that Robin had earned his DXCC plus 53 in less than two years.

I thought it a notable achievement for an operator with only Novice privileges and power on the HF bands.

I am now grateful to Robin for supplying more details about himself. He is a 19-year-old student at James Cook University, now in his third year of a Bachelor of Electronic Engineering course, specialising in communications and satellite systems.

He was first licenced as VK4TVR and upgraded in February 1987. He operates an Icom. 751 with a Werner Wulf 6-element duo-bander.

Recently Robin bought an ICOM 551D for six metres which he uses with a home-brew four-element Yagi. As of mid-February he had worked four countries on it. I have a feeling that his name and callsign will turn up in the AR VHF-UHF column one day.

Finally a word from Robin which may interest others working DX: "....it is never impossible to work any country as long as it is active, you are on at the right time, and you have a good antenna."

He finished his letter to me by quoting a W operator who said to him: "If you put an antenna up and it doesn't fall down, it's either not big enough or high enough."

Auckland C'wealth Games Award

New Zealand amateurs can use the special prefix ZM from June 1, 1989, to February 19, 1990.

The latter date is the closing day of the XIV Commonwealth Games in Auckland, and the NZART is offering an award to mark the event.

Eleven QSOs are needed - five with ZM1 stations, plus one each of ZM2, ZM3 and ZM4, and one Commonwealth country in each of Regions I, II, and III.

A log extract certified by two other amateurs is sufficient and application should be sent to the Awards Manager, Aola Johnston, ZL1ALE, 63 Red Hill Road, Papakura, NZ 1703.

Auckland amateurs will set up a station in the Games Village which will operate while the Games are going on in Jan-Feb 1990, and which will also be available to visiting amateurs. The station will issue a special QSL card which will complement the award.

No charge is mentioned for the award in the publicity material received from ZL.

New DX Guide from Germany

DX-World-Guide (Amateur Radio Countries of the World) by Franz Langner DJ9ZB is not a book about awards, but about DX. However, since DX QSOs and cards are the building blocks for most awards, it merits a review here

It is a professionally produced book of 358 pages, with one for each DXCC country. Area, capital city (with coordinates), ITU callsign allocations, amateur prefixes, CQ and ITU zones, and addresses of na-

tional amateur societies and licensing authorities are given. There a map of each country and where there are regional prefixes, the pattern of these is shown. Changes in country names (e.g. Ceylon to Sri Lanka) and in amateur prefixes (e.g. Tonga VR8 to A3) are also indicated.

All country data is in English and Ger-

The ease or otherwise of hearing or working a country is shown on a scale of 0-5, and there is a small log space for a couple of entries per country.

The pages are not only brightened by the useful maps, but also by photos of operators or DXpeditioneers and QSL cards from each country

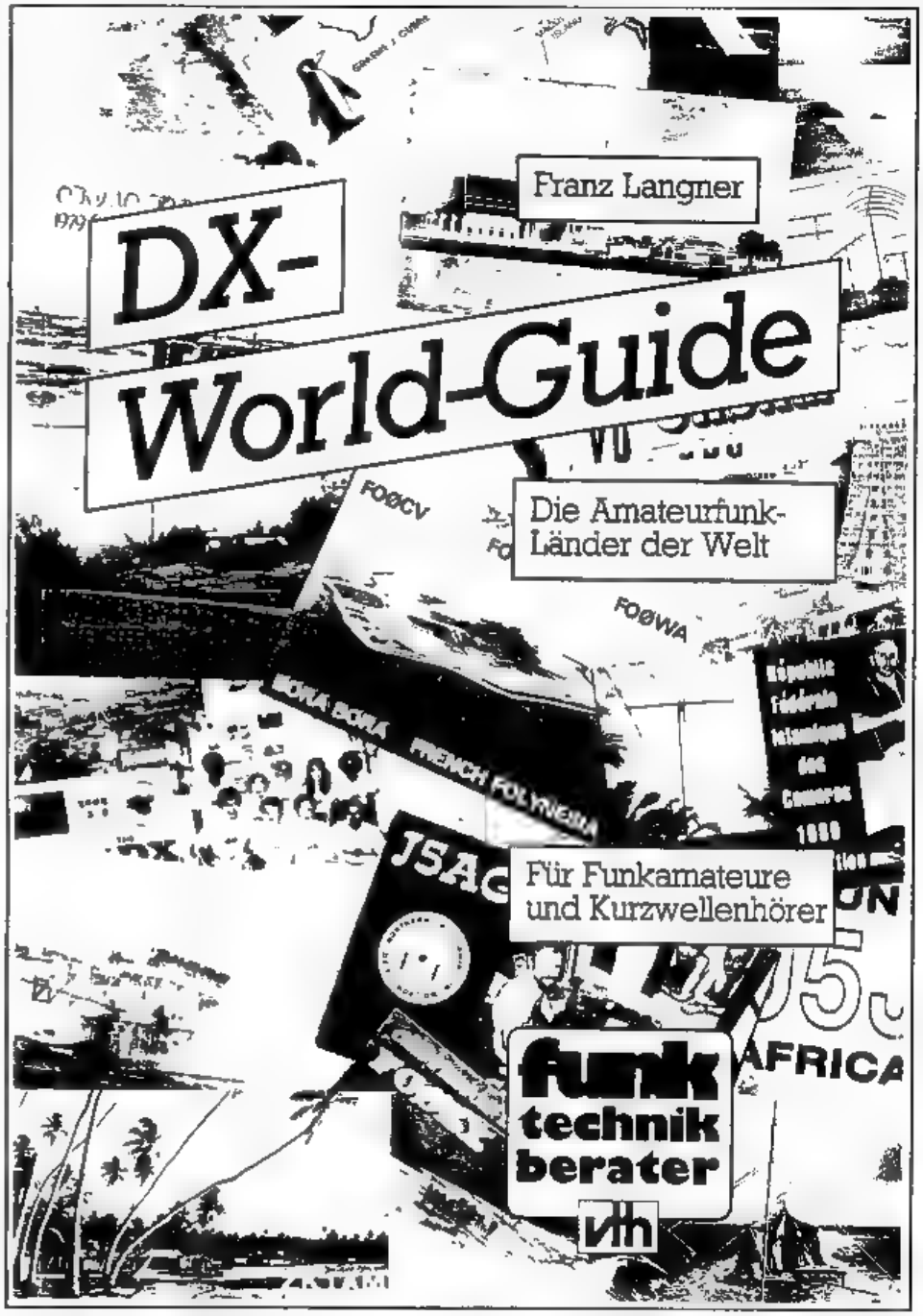
VK3COP is pictured for Australia and the sample card happens to be mine.

True, it was designed by a leading graphics artist, but I suspect it was picked because of the mixture of wonder and amusement which my English surname arouses in Germany.

I have only one mild criticism of DJ9ZB's book. As mentioned, all the DXCC country data is presented bi-lingually, there are a few pages at the start which are German only.

Upon examination most of these prove to be German translations of the ARRL's outline of its DXCC rules and its DXCC criteria. Most readers will have access to English versions of these documents, but Franz may perhaps have made it clearer what these pages represent.

The book is recommended to DXers, SWLs and award chasers. It is available from Verlag fur Technik und Handwerk (but VTH will do), Postfach 1128, 7570 Baden-Baden, Federal Republic of Germany. Cost is A$32 surface mail, A$40 airmail, inc. of packing and postage in each case.



Another Awards Guide

Editorial ethics make it impossible to review the International Awards Guide published by M.S Lumban Gaol YBØWR. I have no review copy of his book, and nobody can honestly evaluate a book he or she has never seen.

However the advertising material for YB0WR's book says it covers more than 750 wards from 70 DXCC countries, and includes full colour reproductions of 634 certificates. Sample pages suggest it is a sumptuous production.

It costs US$37 by surface mail and VK/ZL buyers can get it by registered airmail for an extra US$15. Payment must be in US$ notes, bank transfer or international money order to YBØWR, J1 Garuda No. 62, Jakarta 10620, Indonesia.

Novel Award from Westlakes ARC

Westlakes ARC is offering a special award to VKs only to mark its 25th anniversary and World Telecommunications Day on May 17, 1989.

Claimants must work at least 26 stations anywhere in the world on any band and in any mode during 0001-2359 UCT on May 17.

The stations must inlcude 26 with final suffix letters which spell out the words "World Telecommunications Day". Stations may be worked in any order, but only once for each claimed letter E G , VK2WI counts as "I", VK2LEE as "E" etc..

The Westlakes Club station VK2ATZ will be active on several bands during the day, and may be claimed as any letter That is, if you cannot find a station with a suffix ending in "Y", VK2ATZ can substitute for it.

All mixtures of bands, modes, simplex or cross band, and all call areas, Australia or DX, are in order.

The calling procedure is "CQ Westlakes Telecommunications Day Contest" and for CW "CQ WTD."

Callsigns and RS(T) must be exchanged.

SWLs must log callsigns of both stations and signal reports exchanged.

A certified log extract, with contacts arranged in the letter order outlined above, must be received by last post on June 2, 1989. The address is. WTD 25th Anniversary Award, Westlakes ARC, PO Box 1, Teralba, NSW 2284.

An attractive certificate will be issued to all stations and SWLs qualifying. A silver endorsement will be given if all QSOs are made on one band, or for making the 26 contacts within an hour, regardless of band.

A gold endorsement will be given if the 26 contacts are made in an hour on one band, or if they are made using QRP only, regardless of band.

The fee is 5 x 39 cents stamps or equivalent.

Each application must have a cover sheet, as follows:

"This is to certify that the log submitted herewith is a true extract of the log of ..... (callsign) for the GMT day 0001-2359 17 May, 1989. I have operated in accordance with the rules and spirit of the contest.

..... operator signature

..... witness signature and callsign.

"Certificate to be sent to: ..... (name and address)."

Be sure that the log extract is set out so that the final suffix letters of the callsigns spell out "World Telecommunications Day".

From VK6: New Award? or is it a contest?

Wise investment of a bequest from the late Hugh Spence VK6FS has enabled the WIA VK6 Division to establish three annual VK-DX Achievers Awards.

All VK amateurs are eligible and may apply for one of the awards based on confirmation of 100, 175, or 200 countries on the VK DXCC list.

The date and time of the last QSO to achieve the figure will be the deciding factor.

Further details from the VK6 Division Secretary, PO Box 10, West Perth, WA 6005.

Awards Issued Recently

WAS (VHF)
176 Gil Sones VK3AUI (2 m)
WAVKCA (VHF)
31 Yoshiteru Mori JA2BZY (6 m)
32 Hideo Kiril JA2DDN (6 m)
WAVKCA
1639 Raymond Lee VS6UW
1640 Haruki Kawagishi JH3KEA
1641 Kazuhiko Naito JL1ELQ
1642 Atsu Murakami JA8UBH ar

SPOTLIGHT ON SWLING

Postal problems

Robin L. Harwood VK7RH
52 Connaught Cres.,
W. Launceston
7250.

I am hoping this reaches Melbourne in time for the deadline, because the local Australia Post staff have taken industrial action. As it is now, it takes me sometimes a fortnight to get letters from the mainland to here. 20 years ago, I am positive that we had a superb mail service, with two deliveries a day. Not today! I also am grizzling at the hike in international air mail rates early in February. This, has no doubt, dampened any desire I did have as a New Year's resolution to send out more reports to international broadcasters.

And while I am mentioning reports, I am concerned that more stations are dispensing with QSL cards or verification letters, and issue no details response cards. I understand that budgetary restraints have forced most to adopt this course. Many of the larger organizations have their own monitoring panels throughout the world, so do not rely on individual reports as in the past. They are more interested in listeners' feedback on program content. Some have even commissioned audience research from outside polling bodies. Apparently, only a fraction of the audience bother to write or comment directly to the broadcaster, so the program makers often are in the dark.

The other interesting comment that I would make is that international commercial broadcasting seems to have failed dismally. When the American shortwave broadcasting scene was deregulated early in the eighties, several commercial organizations announced their interest in establishing a commercial H F service. WRNO in New Orleans appeared on the air, but never caught on and has reportedly suffered losses.

The "Christian Science Publishing Society" introduced their "World Service of the Christian Science Monitor" in March 1987 weekdays. Revenue was supposed to come from commercials, but now the station mainly now carries promos for their newspaper. They also bought out KYOI in Saipan from commercial interests, who went close to bankruptcy, operating a music format aimed at Japan. The only other American station with a commercial format is "Super KUSW" in Salt Lake City, which does carry programming for the Mormon church.

Sadly, these stations were often carrying religious programming, to keep afloat There are existing religious broadcasters worldwide, so the program content is often from fringe groups, who cannot afford to get on existing stations With the demise of AFRTS late last year, we now do not get domestic broadcasting output from the States.

Conditions in March were seriously disturbed and disrupted by severe geomagnetic storms. The solar flux climbed to 234, before dropping back to 170-180. There were several recurring solar flares which caused dropouts on daylight HF circuits. One evening, I was privileged to see an aurora, whilst coming back from Devonport late one evening. The 19 metre allocation has been interesting with some European broadcasters coming through around 0100 UTC in English, beaming to North America Deutsche Welle from their Malta relay is heard on 15105 kHz. The Foreign Service of the Spanish National Radio gives excellent signals from midnight UTC till 0600 on 15110 in both Spanish and English. 15125 comes on from 0300 in parallel Deutsche Welle is heard also at 0300 UTC on 15205 kHz in English.

Those who have found the reliable BBC signal on 18080 in our local evening hours, were disappointed to see this frequency close down on the 25th of March The reason is, of course, that it was in the 17 metre amateur allocation and they had to vacate it by the first of July. They have relocated to 17640 kHz, but the signal level isn't as strong at this QTH. Incidentally, the 17 metre allocation came alive when American amateurs arrived en masse early in February. Many commercial services have also vacated this 100 kHz portion, leaving it to the amateurs

Well, that is all for this month Until June, the very best of 73 and good listening!

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HOW'S DX

North Yemen and elsewhere

by Patrick Kelly
VK2RZ
PO Box 41
QUIRINDI NSW 2343

My 4W0PA QSL card arrived a couple of days after I heard that Hans was back in the Netherlands, and that the ARRL had not accepted his operation as being eligible for DXCC.

Even from day one rumours discounting the legitimacy of this operation had been rife. The uncertainty this created only served to add more spice to this tasty DX treat. It is a shame that these rumours turned out to be correct, at least initially, because there is no doubt that Hans did remarkably well.

There is still a glimmer of hope, however and if everything does turn out for the best, then I for one will not be surprised.

Now for some good news.

Marion Is

As I mentioned last issue this rare DX country was about to happen. Well, Peter ZS6PT is now safely ashore, and most importantly on air as ZS8MI.

Peter will operate on all bands up to six metres. I don't know what he will be using on VHF, but for HF he has two Yaesu FT757GX MKII's, a FL2100Z amplifier, and two rhombic antennas – one facing Europe and the other North America.

Already Peter has appeared on some DX nets, and there have been reports of him on most bands working solo.

You will have fourteen months to log Marion Is, so when you do the QSL is to PO Box 1387, Vanderbijl Park 1900, South Africa.

Banaba (Ocean Is)

The intrepid Jim Smith VK9NS has made very quick arrangements to activate Ocean Is as T33JS. He has applied to the ARRL to make this a further addition to the rapidly growing DXCC countries list.

Jim's plans at present are for a short stay commencing in early May. Whether there will be other operators going is uncertain, but if all goes well this trip then a larger expedition should follow to satisfy the demand. QSL to VK9NS. Please note that Australian stamps are not used on Norfolk Island.

Marquesas and Austral Islands

These two island groups lie to the north and south of Tahiti respectively and together with three other groups make up the territory of French Polynesia.

Paul F6EXV and Jackie F2CW spent a week at both locations after the WPX contest. From the Marquesas they operated as FO0EXV/M and FO0CW/M, and from the Austral Islands as FO0EXV/A and FO0CW/A.

Both these operations aroused a lot of interest because there has been a great deal of speculation as to whether they would qualify as new DXCC countries. From what I have heard this is not certain to happen so we will just have to wait and see.

QSL to the French DX Foundation, PO Box 88, F–35170 Bruz, France.

Desecheo

Located north west of Puerto Rico this island rises abruptly from the Caribbean Sea. One of the big gun DX contesters John Ackley KP2A, and his multiband/multi-operator team were on Desecheo from the 5th to the 19th of March. Signing KP2A/KP5 they were there for the ARRL DX Contest as well as the usual DXpedition pile ups.

Unfortunately three operators became ill and had to return Stateside after the contest. To add to this, continuous bad weather played havoc with their antennas. Despite these problems they still made 35000 CW/SSB QSO's on ten bands. QSL to N6CW.

Saudi Arabia

I found Sean operating the oilfields club station HZ1AB on 15 metres at 0442Z. The long path signal was excellent, but there were not many takers. QSL to K8PYD.

Somalia

While working a fair size pile up of Europeans on fifteen metres late on afternoon, I had the good fortune to come across George I2JSB. He is the QSL manager for TS3RC which may be a club station in the capital Mogadishu.

George informed me that he would be in Mogadishu on the 15th of April and would be on air as TS0DX. From the north of Somalia his call would be T53SG. In addition to the usual HF bands George has permission to use 12 and 17 metres, this will be the first time WARC bands have been used from this country. Six metre enthusiasts might have some joy too as George will be looking for VK's on this band. QSL to his homecall.

Nigeria

A good operator who often obliges with skeds on all bands is Giogio 5N9GM.

QSL via the callbook.

Keith N6QLQ/5NØ has been on 15 metres around 0500Z lately, and is in the capital city of Lagos. QSL is to his homecall.

The Colvins, Lloyd W6KG and Iris W6QL, have recently returned home after four months operating as 5B4KG, ZC4ZR, 9H1JN and W6QL/5NØ. From Nigeria they made 3000 QSOs on 10,15, 20 and 40 metres using SSB and CW. QSL to Yasme, PO Box 2025 Castro Valley, CA, 94546, USA.

Vatican

HV3SJ is a station operated by the Jesuits. A new one for me on any band, it is just a sample of the good DX to be found on 20 metres around 2030Z. QSL to IØDUD.

Laccadives

A new operation commenced here on March 15th with four operators – VU7JX, VU7WAP, VU2NTA and VU2NRM. QSL to W2XP.

VU7APR continued to be active from Kavaratti Is. QSL to VU2APR.

Tanzania

Roel 5H3RB is due to QRT from here in July. At this time he is not sure of his next posting, but he has requested VK2 or VK6 QSL is via NM2R or to PO Box 9534, Dar Es Salaam, Tanzania.

French Guiana

Aimee FY4FC is quite often on 28 495 around 0200Z. QSL to PO Box 6005, Cayenne 97306. Two stations who have also been active – Frank FY5EW QSL to F6BFH and FY5YE QSL to W5JLU.

Guyana

Atze 8R1AH will be here for another month or two, and hopefully spend a lot of time on air. There are only a few amateurs

active here and from my experience certainly the most difficult country in South America to work. QSL to C/- The Airport Manager, Timehri International Airport, Timehri Guyana.

Pacific Islands

Here is some QSL information for some of the many stations that have been on air recently. Most of these have been visitors, and I expect that with summer approaching in the northern Hemisphere things will be considerably quieter.

A35HK	QSL to JL3UIX
A35IC	QSL to JL3UIX
5W1UY	QSL to DK7UY
5W1YL	QSL to HB9CUY
5W1HX	QSL to DJ9ZB
5W1HV	QSL to JL3UIX
KH8/NH6RT	QSL to JH4IFF
KH8/K35KE	QSL to Homecall
KH8/DL5UF	QSL to Homecall
H44/DL2GAC	QSL to Homecall
P29VMS	QSL to DL2GAC

FO5DB – Serge, PO Box 813, Papeete

Tahiti

ZK1CT–Archie, C/- Mauke Is. South Cook Islands Via New Zealand

VR6CL-CARL, C/– Post Office, Pitcairn Is Via Auckland, New Zealand

VR6KY–Carrie as above.

Well not a bad month really. Although I did miss a few countries that I needed. On the plus side I did manage a couple of new ones as well as increasing my band totals. One of the good things I like about chasing DX is that you can't go backwards!

Japanese Special Event Stations

The Japan Amateur Radio League has great pleasure in announcing two very special commemorative stations shortly to be in operation, namely.

1)8J6APX – at the Asia–Pacific Exposition to be held at Fukuoka, and

2)8J1YES – at the Yokohama Exotic Showcase (YES).

The following details have been provided about these special stations:

1 Special Event Station "8J6APX" for Asian-Pacific Exposition: Fukuoka '89.

Call Sign	8J6APX
Period:	March 17 - Sept 3, 1989
Operation Hours	00:30 - 08:30 UTC (during July 1 to Sept 2, 00:30 - 11:30 UTC)
Frequency:	3.5/7/14/21/28/50 MHz
Mode:	CW, SSB, Packet
Output Power:	10W - 500W

2. Special Event Station "8J1YES" for Minato Mirai 21.

Call Sign:	8J1YES
Period:	March 25-Oct 1, 1989
Operation Hours:	01:00 - 09:00 UTC (During April 28 to Oct 1, 01:00 - 11:30 UTC)
Frequency:	1.9/3.5/7/10/14/21/28/ 50/144/430/1200 MHz
Mode:	All modes
Output Power:	10 W - 500W

POUNDING BRASS

Morse forever?

by Gilbert Griffith VK3CQ
7 Church St
Bright 3741

A snippet from March 'Break–In' attributed to 'Branch 51 Newsletter', author unknown.

CW Dead Outmoded?

"I often hear the comments that the use of CW is long past the end of the road, and how many of you on completion of your full licence put the key on the shelf never to be used again? Having been brought up in the era when morse was the only way of transmitting information in written form (yes handwritten) between two points, I personally feel that there is a lot of enjoyment to be had in the use of this mode. Given equal power, antennas and propagation conditions, CW will always get the message through where phone may (or may not).

Our ancestral folks the British fought a short war with the Argentinians and hit a communication problem. Argentina had been sold a great selection of jamming gear by the French. Lovely computerised equipment to analyse the frequency hopping modes of the armed forces. The initial call is enough for the equipment to collect sufficient data to lock on and jam the transmission. It had been planned to use several satellites to link ship to shore, ship to ship and back to base in Britain. It is very easy to block the input to a satellite, with a wobbulator and interruptor running at the current baud rate and amplitude tone modulation as well. To counter the ships' radar they used transponders with in–built time delays and these countermeasures nearly proved disastrous for the British. What did they do? They used CW. Amplitude modulated CW and in most cases it was the only way to make contact with the other sectors of the forces. All communications personnel in the forces are now required to be CW operators at 20 wpm.

The wheel has gone right round, and we are back to where I started fifty years ago."

(A possible future market for some of my homebrew junk! Gil.)

An interesting sideline occurred to me just now. What is the fastest way the above 500 or so words could be transmitted, ignoring the fact that someone may be trying to interfere with the actual transmission? A good telegraphist would be able to send the message in about 12 minutes (at 30 wpm) and a packet operator in a second or two, but involving rather more investment in equipment. The commercial world is currently flogging fax as a convenient transmission device. But if I were to send the message on that I would have to run down to the chemist shop first. The sad fact of the matter is that the speed of transmission is limited by the speed the recipient can read! I am convinced that most of the new technology, especially the exotic modes, is not as whizz–bang as the inventors, salesmen, marketers etc, (they have to make a living too) would have us believe. In any case, how reliable is the report in the first place? The glut of information reflected in current times is not without its hazards. I believe that this 'information' should be taken with a certain amount of scepticism, as experience shows that 'reliable sources' are not what they always seem, especially if they're in it for the money. I guess I have been watching too much of "The Investigators" and the like, for my own good. And perhaps you should take me with a grain of salt also!

A letter came just now from Tony Smith G4FAI, who heard from Moe Linn VE6BLY, who heard the new "Q" signal–"QKS" this, he says, means 'how many knobs does your radio have?' Using his new IC761 with its built–in ATU and electronic keyer, he replies, '70/6'. This means that it has 70 or more, but he only knows how to use six of them ... In fairness to Icom, he goes on to say that it is not difficult to use them all and to understand them, but not all in one day perhaps.

A New Law

Interference to your neighbours' electronic installations is directly proportional to the size of your aerial system.

AMSAT Australia Information Nets

Maurie Hooper VK5EA
11 Richland Road,
NEWTON 5074

Control VK5AGR
Amateur check in 0945 UTC Sunday
Bulletin commences, 1000 UTC
Primary frequency 3.685 MHz
Secondary frequency 7.064 MHz
AMSAT SW PACIFIC
2200 UTC Saturday, 14.282 MHz

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the AMSAT Australia net. This information is also included on some WIA Divisional Broadcasts.

AMSAT Aust Newsletter &Computer Software

The AMSAT Australia Newsletter is published monthly by Graham VK5AGR on behalf of AMSAT Australia and now has about 300 subscribers. The Newsletter provides the latest news items on all satellite activities and is a "must" for all those seriously interested in amateur satellites. Should you also wish to subscribe, send a cheque for $20 payable to AMSAT Australia addressed as follows: AMSAT Australia, GPO Box 2141, Adelaide 5001.

Graham also provides a Software Service in respect to general satellite programs made available to him from various sources. To make use of this service, send Graham a blank formatted disk and a nominal donation of $10 per item to AMSAT Australia together with sufficient funds to cover return postage. To obtain details of the programs available and other AMSAT Australia services send a SASE to Graham.

We continue with "The First Flock of Microsats" which was introduced in the March issue.

General Mission Description

All four payloads will be implemented using the new AMSAT-NA satellite bus concept known as "MICROSAT". The satellites are cubical, measuring only 23 cm (9 inches) on each side, not counting antennas. They are designed for use in a variety of low earth orbits but will be most effective if placed into a sun synchronous orbit similar to the earlier Phase-2, AMSAT-OSCAR satellites. The projected satellite mass is 8.5kg. The launch adapter and separation hardware added an additional 2.5kg. The power produced by the satellite solar panels will exceed 6.0 watts averaged over one orbit for the worst case sun synchronous orbit.

LUSAT, PACSAT, and WEBERSAT will transmit in the 70cm amateur satellite band (435 - 438 MHz) and will receive uplink signals in the 2m band. The DOVE will transmit in the 2 m amateur satellite band (145.8 - 146.0 MHz). Planned frequencies are:

Mission	Downlink	Uplinks
DOVE	145.970 MHz	
LUSAT	437.150 MHz	145.900, 145.920, 145.940, 145.960 MHz
PACSAT	437.050 MHz	145.900, 145.920, 145.940, 145.960 MHz
WEBERSAT	437.100 MHz	TBA

These frequencies have been carefully coordinated in order to minimize the probabilities of mutual interference.

The digital downlink transmitters on LUSAT, PACSAT, and WEBERSAT will use binary phase shift keying (BPSK) modulation and will occupy a bandwidth of less than 200 KHz. DOVE will transmit a narrow band FM signal modulated by a voice synthesizer or by digitized sound. Its bandwidth will also be less than 20 MHz. Each satellite will have two transmitters each with a maximum downlink capability of 4.0 watts power output and will be capable of transmitting at various lower power levels under automatic control of the satellite computer or ground command control as dictated by power budget considerations.

The telemetry system for each mission will make at least 32 analog telemetry parameters available to the on board computer. The number of channels may be expanded easily. They provide information related to the health of the satellite. Analog telemetry information will be converted to digital data that will, in turn, be available for transmission in unconnected beacon packets or to connected user stations. DOVE telemetry information will be available via either the voice synthesizer or digitally. The number of telemetry channels may be altered in the final designs.

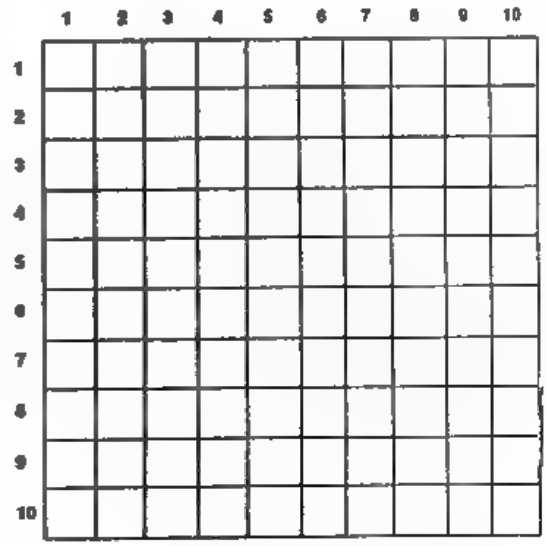
AMSAT has made arrangements for the launch of all four MICROSATS as secondary payloads on the SPOT-2 mission. The launch vehicle is an ARIANE-1. The launch date currently shown by Arianespace is mid 1989. The orbit for SPOT-2 is sun synchronous at a nominal altitude of 822 km. The planned apogee is 835 km, the perigee 817 km and the inclination 98.7 degrees. The satellites will have an ascending node time of approximately 22:30 hours local time.

Although the four satellites will be in approximately the same orbit, there will be slight differ-

Clues to Morseword 26

ACROSS
1 Gaming pieces
2 Clenched hand
3 Emperor
4 Sell
5 Takes to court
6 Clotted blood
7 Kittens
8 Sonnet
9 Ogle
10 Annoy

DOWN
1 Taxi
2 Male deer
3 Clean with a cloth
4 Boast
5 Positioned
6 Midday
7 Track
8 Catcher
9 Loosened
10 Prevalent



Answer Page 62

ences in the orbital parameters due to differences in the deployment speed and direction from the launcher upper stage.

A similar phenomenon was seen with the deployment of RS-3, RS-4, RS-5, RS-6, RS-7, and RS-8 from the same launcher early in 1981. Although all six satellites were in the same polar orbit and thus were available at about the same times of day, their relative positions throughout the orbit at any particular time appeared to be random, changed from day to day and produced a good spread of operating opportunities.

Microsat Hardware Bus description

The MICROSAT spacecraft bus structure is composed of five aluminum frames (or modules) formed into a composite stack held together with stainless steel tie bolts. This stack, an approximately cubical structure, is referred to as the "frame stack assembly". Dimensions of the stack are 230 x 230 x 213 mm (9 x 9 x 8-3/8 inches). High efficiency solar cells are assembled onto four solar panels, which are installed onto the four sides of the frame stack assembly. Additional solar cell assemblies are mounted on the top of the spacecraft.

The side panels are manufactured from aluminium bonded honeycomb material 4.8 mm (3/16 inch) thick. The thickness of these panels will ensure that no buckling of the side panels can occur to damage individual [illegible].

Each of the five frames of the MICROSAT assembly stack contain electronic sub-assemblies suitable to the spacecraft mission, such as receiver, transmitter, computer, power supply and any special application modules such as the DOVE voice synthesizer and digital sound circuitry or the WEBERSAT camera controller and picture storage RAM.

The top and bottom panels of the MICROSAT spacecraft mount the VHF and UHF antenna assemblies and additional solar cell assemblies.

Electrical System Configuration

The frames or modules are used in a functional manner. Each fulfils an important aspect of the overall operation of the satellite. The modules are numbered 01 through 05 starting from the base plate of the spacecraft. The modules function as follows, listed from top to bottom.

LUSAT and PACSAT.

Module 05: FSK Packet Receiver, all channels (+Z)
Module 04: Unused (This Space for Rent!)
Module 03: Power Module
Module 02: Flight Computer
Module 01: BPSK Packet Transmitter (-Z)

[illegible]

Module 05: Command Receiver (+Z)
Module 04: Flight Computer
Module 03: Power Module
Module 02: D/A Buffer/Converter - Voice

Synthesizer

Module 01. FM Voice Transmitter (-Z)

The modules are interconnected using a standardized bus arrangement which minimizes the number of wires necessary for all functions within the satellite. This standardized bus is implemented as an Addressable Asynchronous Receiver Transmitter (AART) board mounted to each module except the flight computer which serves as its own interface. Each AART makes use of one 25 pin D subminiature connector for interconnection with each of the others.

Transmitter Modules

BPSK Packet Transmitter Module

LUSAT, PACSAT, and WEBERSAT all use BPSK (binary phase shift keying) packet transmitters which are the means by which they communicate to the ground. All transmissions are digital NRZ I, PBSK HDLC and will be compatible with the AX.25 Level Two protocol now in widespread use in the amateur radio service.

Under flight computer control, unconnected information packets containing telemetry information (and picture frames for WEBERSAT), and connected transmissions supporting user functions will be available.

The transmitters will use a state-of-the-art high efficiency power amplifier with a maximum power output of 4 watts. Since even at an overall transmitter efficiency of 60%, the orbital average array power of approximately six watts might be exceeded, a means of power control has been

devised that will allow the transmitter to operate at reduced power levels, in all 16 steps between 0 and 4 watts. The transmit power level may be set either by direct ground command or by the computer under software control. The power setting may be changed rapidly if desired. At the highest power setting (4 watts) it is anticipated that the DC-to-RF efficiency of the transmitters can be maintained at approximately 84% on 2 m (145 MHz) and 74% on 70 cm (437 MHz).

Two transmitters are flown in each transmitter module for reasons of redundancy, but they also have experimental value. In each satellite, one transmitter will operate with straight PSK modulation while the other will use raised-cosine modulation which exhibits lower information harmonic content.

It is expected that ground stations using gain antennas will be able to false lock on side lobe energy from the straight PSK transmitter.

The second side lobes in this case are only 14 dB below the main lobe. It is expected that use of the raised-cosine transmitter, whose second side lobes are 38 dB below the main lobe, will greatly reduce the incidence of false lock among users.

The use of two transmitters also raises possibilities of advanced protocol experimentation. It is expected, as the number of users increases, that the uplink capability per user will degrade. Experiments with specialized network schemes and protocols may alleviate some of this difficulty.

At this writing, frequencies for the second transmitter on each satellite had not yet been selected. Data rates supported are 1200 and 4800 bits per second, selectable. Corresponding transmitted bandwidths are approximately 4 kHz and 15 kHz.

The frequencies chosen, 437.150 for LUSAT, 437 050 for PACSAT, and 437 100 for WEBERSAT are selected to minimize functional interference and particularly to inaugurate occupation of the upper 1 MHz of the 70 cm satellite band of 435 - 438 MHz. The transmitters will directly drive 70 cm turnstile antennas which will allow users to employ linearly polarized antennas.

DOVE employs a narrow band FM voice transmitter driven by a voice synthesizer. This transmitter is to operate on 145 970 MHz in the amateur 2 m band and will drive a turnstile on DOVE similar to the 70 cm band turnstiles on the other MICROSATS.

This frequency is just below the AMSAT-OSCAR 13 beacon and above the high end of the AO-13 mode B downlink passband. Power levels, controls, efficiency, and technology are similar to those for the 437 MHz transmitters.

The transmitter will employ FM modulation with a deviation of 5 kHz, consistent with narrow band equipment used in the amateur service. Normally, the transmitter will be used to transmit voice synthesizer data. However, if the satellite is being accessed by a command station, the downlink may revert to 1200 bps AFSK compatible with the Bell 202 tone standards. Once the flight computer is returned to "run" mode, voice synthesizer or digitized sound information will resume on the downlink.

ar

VHF/UHF

An expanding world

Eric Jamieson VK5LP
9 West Terrace
Meningie 5264

All times are Universal Time Co-ordinated indicated as UTC.

Beacons

In another reconsideration of the beacon list there seems little point in listing 52, 144 and 432 MHz beacons in May, August, November and February when in each case they will be listed in the previous month in the total Australian list. The latest proposal is to include only changes or new beacons.

New beacons are TG4BFK in Guatemala on 50.048, KH6HI on 50.063 MHz and GB3BUX on 50.000 MHz.

Six Metres

Six metres continues to hold pride of place for the length of openings and the number of countries which can be worked. The fact that most of the world's six metre operators are now found on 50 MHz means there is little necessity to consider split frequency working although it has been noted that some overseas stations with equipment adequately able to work on a higher frequency have been working ZL stations on 51.110 split to 50.110 and recently I heard a VS6 station on 52 MHz. Overseas stations with antennas cut to 50 MHz may not find much difficulty in working on 51 MHz but often a shift to 52 MHz may cause a reduction in signal strength both ways thus placing Australian stations at a disadvantage.

The monitoring of out-of-band signals particularly from TV stations can alert one to potential band openings on 50 MHz. The USA paging stations between 40 and 44 MHz can be heard most mornings but need to be strong before 50MHz propagation is possible. The Russian R1 station on 49747.7 is a useful pointer to northern openings although the wall-to-wall Japanese stations do not allow you to forget the band is open in that direction! At Meningie JAs have been heard/worked every day during March and up to 7 April when these notes were concluded. It was not until recently that I realised the TV sound on 53.750 MHz could be from Europe, the last occasion being on 2 April. I have noted this and other sundry signals between 53 and 60 MHz since removing the mothballs from the trusty old S27A Hallicrafters communications receiver which tunes from 28 to 140 MHz with a reasonably accurate frequency read-out. Using a CH O/all band TV antenna connected to a rotator it is surprising what can be heard!

The use by vitigant 50 MHz operators of sophisticated equipment which include scanning facilities has done much to ensure the success of Cycle 22 and many more DX stations will be heard and worked before this Cycle fades away.

What have we worked?

At times like these in Cycle 22 and during prolonged Es periods, I find it very difficult to prepare these columns! Not necessarily because there is a need to be within hearing range of the transceiver (I am three paces from it) but from the need to sift through a mountain of information gathered and received from a variety of sources.

In VK5 near Berri on the Riverland, Hugh VK5BC has been one of the most consistent operators calling frequently on CW and SSB, in fact he has been dubbed the SA 50 MHz beacon! Hugh regularly works the JAs and they must be thankful he is on the air to provide needed contacts. He responded to my request for a copy of his log as a basis for what has occurred during the past month.

28/2: From 0132 to 0428 UTC JA1,2,3,7 and 8 for 12 contacts. 9/3: 0335-0419 JA7 and 8 for 5 contacts.

15/3, 2318 WA7YWF, W7RV, WA7YWM, K7LDT, WA6BYA, WB7OHF, WA7CJO, NI6E/KH6, K6STI, KH6JJI, KH6IAA, KH6IJ, JA1,2,3,6,7,8,9,Ø for 48 contacts. 16/3 2248 JA2,3,8 for 7 contacts. 17/3: 0453 JK1BJX, JF6MLV, JA7WSZ and JRØPFP. 18/3 2320 JA1,2,3,4,5,6,7,8 for 17 contacts.

19/3 2238 WA6BYA, N6XQ, WD5K, AA5AM, W6XJ. 22/3 0145 JA8RC. 23/3 0351 13 JAs. 24/3 0345 JH4TPO. 25/3 0415 KX6DS on CW and SSB, JA6DMB. 28/3 0115 KH6JJI, KH61JE and 3 JAs. 29/3 2242 T30DJ, FOØAQ, FO5DR, 3D2ER, YCØUVO, KG6DX and 18 JAs. 30/3 0134 KH6JJI, KH6IJ, T30DJ and 10JAs. 31/3: 2318 K6STI, AA7A, WA6JRA, N6XQ, KD6R and 12 JAs.

1/4 2253 T30DJ, H44GR, KG6DX, V85DA and 8 JAs. 2/4 2232 FO5DR and ZK1WL both on CW and SSB, 3D2ER, 5W1GP, V85DA, KG6DX and 19JAs. 3/4: at 0000 the H44IR beacon on 50 005 was S9+ 20 dB around the time 3D2ER was heard in QSO with 8R1AGH (Guyana), 0030 VP5D beacon on 50 099 at S3. Hugh tried to arouse some interest on 28.885 but failed, 0200 heard DU3KE and at 0325 heard T30DJ and a JA in contact with an OA (Peru) station.

Hugh comments that he cannot recall conditions equal to the present in any previous Cycle in the past 30 years and indicated how far off the beam some of the pundits were with their predictions a few years ago that Cycle 22 would be poor! The history books will need to be re-written.

For all the time that Hugh has operated, in

common with others, there are always stations you do not work (you need to wash and eat at times) as the following from the VK5LP notebook indicates

14/2. John VK4KK reported he, VK4ZNC and VK4ZAL had a ball from 2200 when they worked K6MEF, W6BJI, K6MYC, WB4OSN, N4EJW, WA4OWC, W8HXT, K4HQXX, KB4CRT, WB4OOJ, WD5K, W5ZBI, K6PXT and WA7LYI. They also heard a W1 and KH6. The band was open for about an hour. Later in the day KX6DS was worked. VK2BA worked HL5BAS and HL4MC. (This item was missed from last month).

1/3: VK3BQS said VK3 were working Ws during the afternoon. 2/3: Strange FM station observed on 103.3 MHz at 0630 and 5ABC at Loxton on 105.1 was very strong.

12/3 worked VS6UP and VS6MQ at 0922. VK5LP decided that as it was some time since he had worked many JAs the time was now right. Over the next two days I worked more than 100 - conditions were so good that at no time did I use more than 10 watts.

13/3, strong aurora noise, VK5RO and others working VKs, Wally VK6KZ said aurora heard as early as 2045 but no decipherable signals. 14/3 from 2320 WA7YWM, WA7CJO, W7RV, W7LYI, KN5S, WA6BYH and NI6E/KH6. I was rather pleased with this performance as I had never worked a US station before despite trying for 28 years! At 2353 VK4ALM was heard working a W5.

15/3, 0650 JAs heard working FO8DR and FK1TK. At 2330 JA8RC said he had that morning worked VK1 to 8, ZL and FO8. 17/3: 0400 JA4MBM said he had worked VK3, 4 and 9. 18/3: 2241 VK5NY and others worked WA6BYA, K6QXY and heard N6XQ and K6LTY.

20/3: Peter VK6KXW worked Tim G4FJK at 0836 with signals 4x3 sent and 5x7 received. Peter also had a cross-band contact 50/28 MHz with a 4S7 in Sri Lanka but details are sketchy. Congratulations. 23/3: XX9KA in Macao was worked by Peter VK8ZLX and also VK4s.

24/3: Phil YBØARA working VK4. VK8RH, AH, LM and ZWM worked 9H1HK and four other Maltese Stations from 0722. Signals were 5x9 and the opening lasted for two and a half hours! They are contacts to be remembered. Later the Darwin stations worked V85DA also 5x9.

25/3, VK4VV and VK4RO reported working ZD8MB at 0130. VK8GF and VK8ZLX worked P43AS, TI2KD, V85DA, DU3 and for a very good contact HP3XUH in Panama - QSL via KA4MVK.

26/3: 2100 VP5D worked by VK4KJL and VK4ZJB, 2130 P43AS to VK4KJL, VK4DDG and VK4DMI, 2200 TI2KT 5x9 to VK4KJL, DDG, ZAA, ZAZ, SJB, DMI, ZNC, ZAL and Pu. 2150 VK5LP to 3D2ER, XE1MD, P43AS, W5UWB and XE1GE for a fair mornings work. P43AS was on the island of Aruba north of central Venezuela - he peaked to S9 with his 10 watts! From 2213 VK5NY worked 3D2ER, VP5D, XE1GE, P43AS, XE1MD, KP2A, KP4A and KP4EIH. VK5KK about the same time worked P43AS, XE1MD, PF5JM (Brazil), KG4SM (Cuba) XE1GE and KP2A. VK5ZK got XE1GE, P43AS, KP2A and KP4A from his temporary station at Goolwa. Good work gents. VK5LP was having breakfast at that time! VK5NY to KX6DS at 0234 and KH6DS at 0245.

28/3 0015 T30DJ S1 on CW at VK5LP, 0122 KH6JJI 5x9, 0323 VK6IOW worked WB6VYH, Ken VK6AKT worked KB6FIQ/DU3 and V85DA. VK30T heard on CW working Ws, 2238 fast CW on 49.5 MHz at S4, 2240 heard VK4 working 5W1.

29/3. 0416 V85DA 5x9 Andrew at Brunei, 0523 YCØUVO 5x1 to VK6HK and VK6WD. 0528 VK5NY to YCØUVO on backscatter, then KG6DX at 0546, also at 0546 VK6AKT worked V85DA and KB6FIQ/DU3 and VK5ZK worked KG6DX on CW via backscatter, 2250 VK5BC heard working T30DJ and FO5DR on CW both very weak at Meningie.

30/3: 0412 KH61J and KH6JJI both 5x9, 2313 VK5NY heard WA6BYA on CW, VK3OT to K6WD. 31/3: VK5ZK reported AM signal on 52.995 is the third harmonic of a Russian shortwave station, 2300 T20DJ weak on CW, 2306 H55GR 5x9, KG6DX 5x6.

1/4: 0031 KG6DX, 2302 3D2ER, KG6DX, 2345 VK3OT calling P29ZEF and P29PL, 0303 VK6AKT worked V85DA, 2359 VK1RX S2 on [redacted].

2/4. 0150 KX6DS 5x6 Marshall Islands. 0226 YCØUVO 5x9 Indonesia. (Via backscatter VK8GF was heard working YCØUVO who had his antenna on Hawaii. On turning his antenna his signals rose to S6 and within ten minutes were S9+20dB. At Meningie he was that strength for more than an hour - I worked his three times - and I noted he worked into VK2,3,4,5 and 8. His QSL address is PO Box 77, JKSL, Jakarta Indonesia 12240.) At 2235 backscatter signals to 55 were heard from VK2MZ, VK5DK, VK3LK, VK3AUU, VK4KJL, VK6 and VK8ZLX. At 2245 [redacted] so for more than four hours.

3/4: 0010 VK4 worked Steve TG9AWS in Guatemala. Signals were barely above S1 in VK5. At 0555 Andrew VK8AH in Darwin worked 5H1HK in Tanzania for what must be rated as a very good contact. Andrew was alerted to the possibilities through hearing the ZD8VHF beacon on Ascension Island the day before. Peter VK8ZLX worked T30DJ. 2256 YS1ECB in San Salvador was worked by VK5BC, VK5NY and VK5ZDR. Col VK5RO tried but could not catch him due to VK2 and VK3 QRM. Absolutely no sign of YS1ECB at either VK5ZK or VK5LP. Also reported that VK2MZ had worked ZF1RC on Cayman Island - good contact that! Roger VK5NY heard ZF1RC weakly at 0005.

5/4: From 0600 VK5LP hearing strong video peaking north-west on 55.0, 56.0, 57.0, 58.2, 60.1 and 62 MHz. No sign of amateur signals. 2205 N6AMG on 28885 he was hearing weak CW from VK6, also ZL TV strong. Jim T30DJ for his last day as T30 worked many stations in W on backscatter also VK5BC but very weak at VK5LP. Ken JA3EGE said he worked VK9YQZ on Macquarie Island at 2200. At 2300 YS1ECB into Adelaide again and worked by VK5RO, VK5NY, VK5ZDR and others. Signals were peaking to S8 but Garry VK5ZK at Goolwa and VK5LP at Meningie never heard so much as a whisper from Edgar - very strange. At 2313 ZF1RC on Cayman Island worked by VK5ZK, VK5LP, VK5BC and VK5ZDR and there could have been others. Signals were 5x5. QSL to Box 1549 Cayman Islands. Also heard that VK4BRG worked 5H1HK. Graham VK6RO worked T30DJ for a rare contact.

6/4: A morning with mixed conditions. Although VK5ZK and VK5LP are about 57 km apart over level lake/river water VK5ZK from about 2150 was able to work XE1MD and W5OZI on SSB and W5OZI, WA5IYX and K5LZO on CW and heard the VP5D beacon on 50.099, VK5LP had to be content with a solitary contact with XE1GE! Conditions at VK5NY were also poor. VK5BC at Berri worked K5LZO, XE1MD and XE1GE and was hearing VP5D. Steve VK3OT heard on backscatter. The H44HIR beacon was S9 for most of the morning. At 2225 very strong video on 57.3 MHz peaking north-[redacted].

With the AR deadline fast approaching I must finish the six metre notes at this point with a comment. Quite frankly, I am amazed how often the six metre band opens to F2 contacts - every morning for at least the past two weeks and probably longer there have been stations to work to our north east, sometimes, only the Pacific as far out as Hawaii, at other times to Mexico, USA, South America or the Caribbbean. VK5 is out on a limb when compared with the eastern States for such contacts so what is recorded here are only a few of the many scores of similar contacts made from Australia. Unfortunately, VK6 shares even less than VK5.

Following a 10 metre contact with Bob WA6BYA, Garry VK5ZK said a new disease had become apparent on the west coast of USA that of "F2 flu!" I had to work that one out and so too should readers. Also Bob said that "around the world at present the productive time lost to amateurs listening to noise on six metres must be measured daily in thousands of hours!" How true. On average, for every one minute contact completed we probably listen to noise for an hour.

Notable contacts

(details above)

14/3: VK5LP to WA7YWM (28 years wait!)
20/3 VK6KXW to G4FJK
23/3 VK8ZLX to XX9KA
24/3. VK8RH, AH, LM & ZWM to 9H1HK etc
25/3: VK4VV & VK4RO to ZD8MB
VK8ZLX & VK8GF to TI2KD & HP3XUH
26/3: VK5KK to PF5JM, P43AS, KG4SM, KP2A, VK5NY & VK5ZK to VP5D, KP4A, KP4EIH
29/3. VK6KXW to WB6VYH
29/3 VK5BC to T30DJ and FO5DR
VK5NY to YCØUVO
2/4. VK5BC to ZK1WL
3/4: VK4 to TG9AWS
VK8AH to 5H1HK
VK5ZDR, VK5BC, VK5NY to YS1ECB
5/4: VK9YQZ to JA3EGE
VK5ZK, VK5ZDR, VK5LP to ZF1RC

Outstanding contacts for the month: VK6KXW to G4FJK and WB6VYH, VK5KK to PF5JM and KP2A, VK6s to 9H1HK and VK8AH to 5H1HK.

Macquarie Island and Antarctic Callsigns

Neil Penfold, VK6NE writes to say that in

relation to the confusion whether VK9YQS/Ø and VK9YQZ/Ø must sign/0, the answer is that they do not as DoTC have advised that the figure and first letter of the suffix no longer belong to any geographical area. Apparently something to do with their computer being unable to handle the task of sorting out the callsigns!

The same situation exists with VK9 - formerly VK9M was Mellish and VK9Z was Willis Island which was useful for identification. Therefore, in future don't take the location for granted but ask the operator! However, for the present there are no amateurs amongst the meteorological crew on Willis and the next changeover is July.

Western Australia to Europe

Last month I reported contacts on 26 February between VK6 and Norway/Finland but some call signs were missing. The March 1989 issue of "The West Australian VHF Group Bulletin" states that Norweigian signals were heard by VK6WD, HK, KXW, RO, ZKO, ZFY, KZ and YU but not all established contact. From 0811 VK6WD worked LA3EQ, LA8WF and LA9UX. VK6KXW worked the same three plus LA6LCX and OH1TP. VK6WD and VK6KZW worked SM6PU cross-band 50 to 28 MHz at 0920.

Bits and pieces

Just as I was about to print this epistle the mail brought a "6m Activity/Information" sheet from Ted Collins G5UPS which includes some excellent tidbits on world-wide six metre activity. Thanks Ted.

The QSL route for 5H1HK is via JH4RHF

5Z4RT in Kenya is preparing to operate cross-band to 28MHz and will book into 28.685 on Sundays

Sweden is to allow 25 amateurs to operate on six metres - the first are SM6PU and SM7BAE and operation is permitted after TV hours around 2235 UTC

Faroes Islands had a six metre club station OY6FRA

ZS6PW beacon is now on 50.026 5 MHz having shifted from 50.010

TR8BL (QSL via W3HNK) and TR8RLA in Gabon have been issued with six metre permits.

G4UPS achieved two firsts on the same day in 1989 on 25 February QSO with JH4IUO was first G/JA and QSO with VS6UP was the first G/VS6. A good effort and hard to better

Icom 551D and two four element six metre yagis sent to Peter ZS8MI Marion Island on 29 March

9X5AA in Rwanda has a six metre rig but only a wire antenna

9J2KF in Zambia was recently worked in 9H1 (Malta). QSL via PO Box 30027, Lusaka, Zambia.

Gerry LU8MBL in Argentina - QSL to arado Salvador, Ruiz, Colon 1981, 5501 Godoy Cruz, Mendoza, Argentina

G4FJK had what is believed to be the first G/VK two-way QSO on six metres at 0833 on 20 March when Tim worked Peter VK6KXW. G4FJK runs 10 watts to a 5 element Tonna. His former call sign was VP2VGR.

VK8VF the Darwin beacon reported as moving to 50 056 MHz. Strange that VK5LP should find out via the UK - after all, there is a VK beacon list in AR.

KH6HSS/5NØ QSL to Calvin Higa, PO Box 554, Victoria Island, Lagos, Nigeria.

Stations worked in G land include CX4HS, CE30K, CE6ABK, LU8MBL, LU9AEA.

From Bill Tynan W3XO of QST and "World Above 50 MHz" are a number of call signs and locations which should be noted as possibilities from VK. They include J25US, CT3BX, HC2FG, PZ1AP, OA8ABT, HH7PV, KL7NO, J73PD, LU4EJ, VP8PTG, FM5WD.

I note also that Bill W3XO has shifted from Maryland to Texas which brings him within a more likely range for VK QSOs. VK5LP recently worked a couple of stations in Texas. Time will indicate if Bill changes his call-sign or adds /5.

The April 1989 issue of "The Propagator" carries an excellent article on a full coverage six metre beam from Roger Harrison, VK2ZTB. It has five elements on a two metre length wood boom and is of log-periodic design from 45 to 55 MHz with a gain of 6-7dB which would be very useful for those with receivers tuning the 40 MHz region when checking the state of the MUF.

Radar

I wonder if moves by the Civil Aviation Authority to erect a navigational radar on a high point near Marble Hill the the Mount Lofty Ranges, which is one of 19 similar radar towers to be erected between Perth and Cairns is connected with the report I received of a Meteorological Bureau Wind Shear Radar which is to be erected at Darwin.

The Wind Shear Radar would operate with a peak power of 80 kW and 1 or 2 mS pulses on 49.945 MHz! How much will you give for amateur radio on 50 MHz with that thing virtually in your backyard and right in the pass band of the television Channel Ø! Goodness me, why should anyone want to be worried about the few watts (by comparison) that amateurs are using on 50 MHz?

If true, I can imagine the devastation it will cause to amateurs in the Adelaide city and metropolitan area when operating from such a prime site as Marble Hill. Similar prime positions could no doubt be utilised in other capital and provincial cities around Australia with equally devastating results.

Closure

Perhaps I had better close now before I say much more!

No reports have come in from operating on higher bands - I suppose almost everyone is on six metres.

Two thoughts for the month: "There's one thing to be said for inviting trouble - it generally accepts" and "You never know what makes some people tick until they begin to unwind." 73 from the voice by the lake.

Stop Press:

On Monday, 19 April at 1148 Peter VK8ZLX worked JA6GSW at 5x5 on 144 110 MHz for a possible Australian record contact. Jeff VK8GF first heard JA and alerted Peter but Jeff may not himself have made contact.

ar

QSLs

From the WIA collection

Ken Matchett VK3TL
PO Box 1, Seville, Vic. 3139

VKØKT

This QSL from Macquarie Island shows the location of the island. It lies approximately 1,400 km to the SSE of Hobart, a little over half-way to the edge of the Antarctic continent. The island, of volcanic origin, is about 32 km in length and varies 3 and 6 km in width. It is by no means a flat island; its central plateau rises 300 metres above sea-level.

Macquarie Island was discovered on 11 July 1810 by an Australian, Frederick Hasselburg, master of the brig "Perseverence" which had set sail from Sydney on a voyage to the islands south of NZ to procure seal-skins and sea elephant oil. At the time these commodities were almost the only ones available for export from the new colony. The captain named the island after Lachlan Macquarie, Governor of the Colony of New South Wales who had taken office on the 1st January of the same year. The island proved to be a bonanza for a succession of commercial organizations which maintained gangs of men on the island to kill sea elephants and in later years, penguins for their oil. By the middle 1830s the fur seals had been exterminated and the elephant seals greatly reduced in numbers. The island came under the jurisdic-

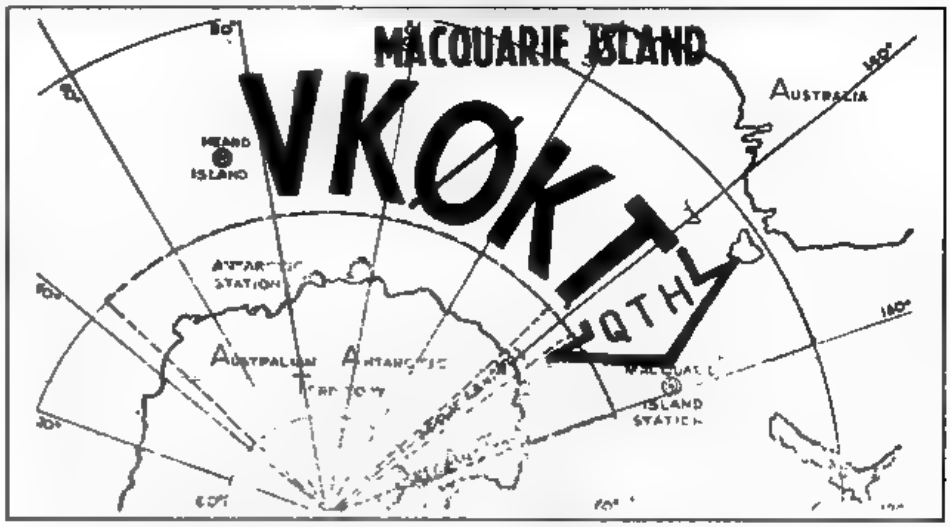
tion of the Governor of Tasmania in 1889.

There have been several visits by scientists over the years, the first really significant one being that of the Australasian Antarctic Expedition under the leadership of Sir Douglas Mawson in 1911. Later in 1930, the British Australian New Zealand Antarctic Expedition (BANZARE) visited the island for scientific study. After threat of extinction of much of its wildlife, the island was declared a sanctuary for birds and mammals in 1933, although Mawson's reports on the fate of its wildlife did lead to the non-renewal of sealing permits before this date.

After preliminary reconnaissance by long range aircraft of the RAAF in March 1947, a scientific and meteorological station was set up by the Australian National Antarctic Research Expedition (ANARE) one year later. In 1956 it was recorded that fur seals had returned and begun to breed on the island after an absence of 100 years. Macquarie Island was proclaimed a Tasmanian State Reserve in June 1972. It is interesting to note that Macquarie Island is the only island to the south of New Zealand not under the jurisdiction of that country.

Notification of the addition to the ARRL Countries List of Macquarie Island as VK1 was made in the July 1949 edition of QST. This was one of the early post-war "new country" additions. In 1957 the prefix VKO was being used for both Macquarie and Heard Islands in place of VK1.

The WIA collection holds a considerable number of different station QSLs from Macquarie Island. Many of these QSLs will become, it is felt, of significant historic value when the story of amateur radio on Macquarie Island is written.



VK1MA

This QSL is one of several using the older VK1 prefix. It is not surprising that several Macquarie Island QSLs show the penguins for which the island is famous. Although at one stage seals and other wildlife were threatened with extinction, it is pleasing to note that today the island boasts the world's largest penguin colony estimated to exceed two million birds, the Royal Penguin being endemic to the island.

The ANARE station originally set up in 1948 has been operated continuously since that date, the normal term of duty of its officers lasting twelve months. ANARE carries out research into biological and other sciences including meteorology and upper-atmosphere physics.

If you would like to play a part in building up the WIA QSL collection and to save something for the future would you please send a half-dozen (more if you can spare them) QSLs which you feel would really help the collection along.

All cards are appreciated but we especially need commemorative QSLs, special event station QSLs, especially assigned call QSLs (e.g. VK3SIG), pre-war QSLs, unusual prefixes, rare dx and pictorial QSLs of not so common countries. Could you help? Send to PO Box 1, Seville 3139 or phone (059) 643721 for card pick-up or consignment arrangements for larger quantities of cards.

The Wireless Institute of Australia would like to thank the following for the contribution of QSL cards towards the WIAs own QSL collection:-

Jack VK5LN
Steve VK3OT
Ray VK4ARS (ex VK3RS)
Shep VK5DC
Fred VK3CFK
Ray VK5RK
Lees VK5LC
Ron VK3QP
Rupert VK3BC
Ernie VK4GE
Phyl VK4CPL
Roy VK3XY
Tom VK5TL
Ken VK3NW
Len VK3LN
Howard VK5XA
"Wick" VK5WM
Rex VK3VG
Alf VK3VJ
Moira VK8NN
Eddy G4GIZ
Ron VK3OM
Rod VK3TJ
Sam VK2AKP
Neil VK2CNS

Stolen Equipment

ICOM two-metre FM transceiver, Model IC-22S, Serial No 15674. Stolen from a garage in Meadowbank NSW on 11 Feb 89.

Contact owner Ian Bryce VK2CIB, Ryde Police on 02 807 3100, or your local police.

Also thanks to the friends and families of the following 'silent keys' who have contributed QSL cards.-
Cliff Pickering VK3ATP
Lin Brown VK3ARL
Allen Jacobs VK4BAJ
Frank McClymont VK3AYR
Ralph Williamson VK3BRF
Eric Wheeler VK3EW
Arthur Forecast VK3AM
Jack Christenson VK3DOJ/ZCL
Graeme Clements VK3TK
Phil Levenspiel VK2TX
Max Hull VK3ZS
Ron Jardine VK3PR
Jim Blackwood VK3ABL
Len Johnson VK3YF
Ces Waring VK3YW
Eric Martin VK3ZF
Stewart Smith VK4LA
Len Simmons VK3LV
John Heine VK3JF
John Winton VK3XR
Geoff Campbell VK2ZQC
Frank Sullivan VK3ZJ
Tom Manks VK3TZ
Vin Leonard VK3PJ
Harry Cliff VK3HC
Doug Iliffe VK3OY
Albert Durose VK3DUR
Pete Bowman VK5FM
Doug Norman VK3UC
Eddie Jinks VK2ADJ

If it is your sad duty to assist in the disposal of equipment for a family of a "silent key" would you kindly approach the family to see if they would like to donate QSLs to the WIA collection. Most are assigned to the tip but maybe we can save a few for the future.

DX QSL Contributors' ladder

As mentioned in the March issue of "AR" on page 55, we have commenced making up a ladder of points given to those generous DX-ers who have contributed rare DX and prefixes to the WIA QSL collection.

To date the three best scores are:

Henry VK3AHQ with a remarkable 91 points, gained for the following contribution:- ZA2RPS (new country to our list), Prefixes DT6, DTO, CV2, DU5, EQ2, FR0, GD5, OF9, PT2, PW1, SQ3, SQ4, SK9, TY3, VA6, VB1, XE5, 3Z0, 4M0, 9H3, Special call 3C5US (Uni. of Saskatchewan),

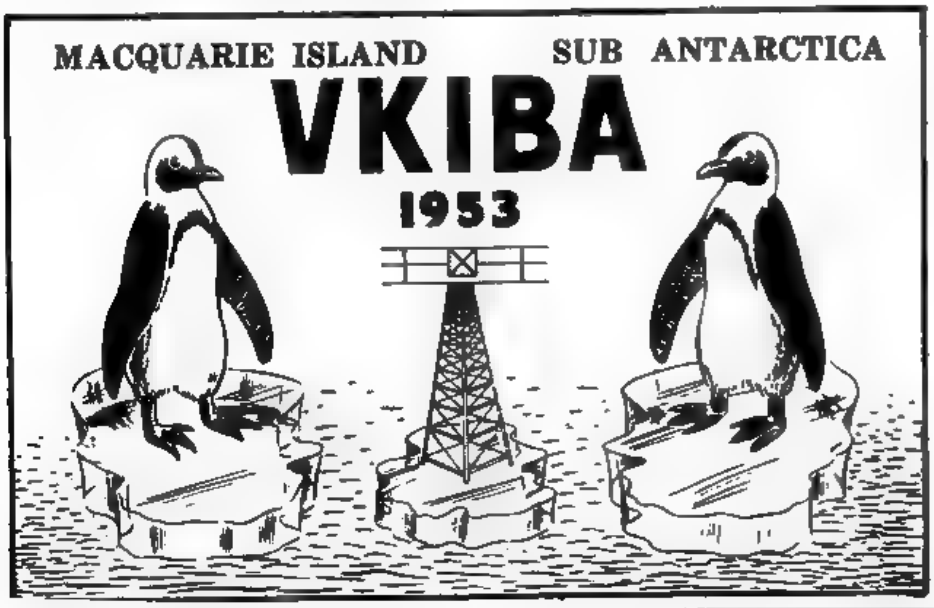
Steve VK3OT (10 points), Prefixes OY9, TD4, 5V7, TZ4, Special calls DU0WPX, HD1DX,

Ron VK3QP (9 points), Prefixes 4D9, YS3, EW4, CP6, Special call GB2WCY

Of course as more and more different prefixes and special call QSLs come into the WIA collection, the task for DX-ers to add to the list will become harder and harder

Our thanks to all contributors - keep up the good work.

Ken Matchett VK3TL
Hon Curator, WIA QSL Collection
PO Box 1
Seville, Vic 3139
(059) 643721.
ar



Due to space limitations the continuing article "A Short History of Communications" by Ted Roberts VK4QI has had to be held over until next month.

ALARA

The 222 YL DX Net

by Joy Collis VK2EBX
PO Box 22
Yeoval 2868

Barry VK7GE has controlled the YL–DX net (held every Monday on 14.222MHz at 0600 UTC) since December, 1981

His patience, courtesy and good humour are well known, and we were all disappointed recently when he announced that, because of work commitments, he will not be able to come on the net on a regular basis. We all hope this situation will change, but in the interim the net will continue as usual

We would all like to express a sincere vote of thanks to Barry for the work he has put into the YL net, and for being there nearly every week. He has coaxed many a shy YL "out of the woodwork." Here's to you, Barry – and THANK YOU!

YL Activity In Finland

Kirsti VK9NL sent the following extracts translated from a letter received from Marja OH6CD:

"We (the YLs) have been very active during the YL year 1988 – conducted various contests and issued the Leap Year Award and Leapyear Day Award. The latest contest was the YL contest on 8.8.88. This autumn we had a meeting at my place where we decided to conduct a YL – contest on 8th March 1989 which is the International World Women's Day. (In Australia this is usually remembered as Women's World Day of Prayer.)

Tuija OH5MX has designed a QSL Certificate which will be mailed via the bureau to everyone who sends in logs, free of charge. YLs all over Europe have been informed – also in Japan and the USA. So many OMs complain that the YLs are not active, and we therefore decided to have this contest in the hope that YLs will be inspired to come on the air more often.

There are not that many active YLs in Finland, but we do meet four times a year, have our own column in the national magazine, take part in contests and have our YL net every Sunday on 80 metres."

Kirsti comments "It sounds like the YLs in Finland are kept fairly busy." They certainly don't let any grass grow under their feet in the chilly North!

Information was also received by Kirsti about a YL meeting to be held in Finland on 17/18th June 1989. Any Australian YL contemplating a European holiday at that time, and who may be interested in attending, can obtain more details from

Marja Valnio OH6CD
Hilloskaari 3,
60220 Seinaejoki
Finland.

Here and There

Kirsti VK9NL hopes to be going to Svalbard (JW) in June, and will be active from there for two weeks with Laila WA4ZEL if all goes well. A rare YL country, if we can manage to work either of them.

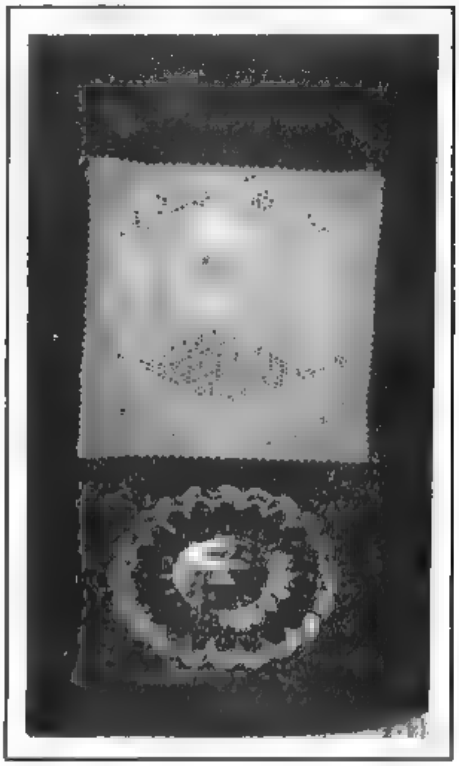
With improving propagation, YLs have been getting together for a chat on 21.200 MHz at 0400 UTC Mondays, and hope to make this a permanent net. All YLs welcome.

Our warmest wishes to Jessie VK3VAN. Our thoughts and sympathy are with you, Jessie.

Dan and I are packing in preparation for a trip to cooler climes, one week in Canada and three in England. We hope during that time to meet Elizabeth VE7YL, Bobbie VE7CBK, Margaret VE7DKC, and also visit the Yeovil (Somerset) Amateur Radio Club, (if we can survive the cold weather!)

Don't forget:

The Alara Annual General Meeting
Monday 22nd May. 3.580 MHz +/- 1030 UTC.



"The Mavis Stafford Bicentennial Trophy– suitably inscribed silver plated oval dish.
Consolation prize donated by Margaret VK4AOE: embroidered table-centre

CLUB CORNER

Meetings, conventions, P29 DXpedition

The Third Annual General Meeting of the Land Forces Amateur Radio Group was held on 15 March 1989 at 0930 UTC on 3.590 MHz.

Nine (9) members were on parade.

The elected office bearers for the ensuing year (89-90) are:

President VK1NDJ Joe.
Vice-President VK3AXM Joe.
Secretary VK2ELE Allan.
Treasurer VK7NBF Bob.
Awards VK3CQP Vic.
Discussions Wkly VK2ELE Allan

The group meets each Wednesday evening at 1000 UTC on 3.590MHz plus or minus QRM.

Membership is open to any Amateur or SWL, Male or Female serving or ex service member of any Armed Land Service world wide

Membership details are available on weekly nets or from the Secretary VK2ELE QTHR.

South East Radio Group Inc

ANNUAL CONVENTION 1989
10TH AND 11TH JUNE 1989

The South East Radio Group Inc is again holding its popular convention over the Queen's Birthday long weekend in June this year.

As usual there will be many interesting trade displays and used equipment tables plus the opportunity to catch up with many old friends. For those who do not wish to compete in the many exciting events, there is ample space to sit and talk or to browse around if this is your desire. This coupled with excellent food makes for a very pleasant weekend in any equally pleasant city.

For the first time this year the South East Radio Group Inc is hosting the Australian Fox Hunting Championships with the permission of the Wireless Institute of Australia. As we are renowned for offering plenty of excitement in this area, we feel sure that the competition will be additional ones for the winner of the Australian Fox Hunting Championship.

You are urged to come and spend an enjoyable weekend with us on the 10th and 11th June 1989. Anyone who has been before will tell you how worthwhile it will be.

Should you decide to attend, accommodation will need to be organised as quickly as possible as Mount Gambier plays host to many functions at this time. Further information and registration forms can be obtained by writing to the Convention Co-ordinator, PO Box 1103, Mt Gambier, 5290.

See you there.

From the top

The Eastern Highlands amateur radio club will be undertaking the first ever, amateur radio transmission from the top of Mt Wilhelm (at 14793 feet, it is the highest mountain in Papua New Guinea. Location 145E 06S). This unique event which will be taking place on the 2nd and 3rd June will be the highest amateur radio station in Papua New Guinea to broadcast and possibly in the South Pacific region. So all you amateur radio operators and short wave listeners tune up your receivers and get involved in a very unique event. A special QSL card will be available. Any short wave listeners who are able to receive the station should send a detailed reception report to the address listed below.

Technical details:
DATE: 2nd and 3rd June 1989
TRANSMISSION TIMES: 2300 UTC 2nd June - 2300 3rd June (24 hour operation)
FREQUENCIES: 14.195 MHz, 14.305 MHz, 144.01 MHz, 144.10 MHz
STATION CALL SIGN: P29 CEH
ADDRESS: PO Box 789, GOROKA, E H P, Papua, New Guinea.

Down at Moorabbin

The prizes at the Moorabbin and District Radio Club's Paper-Chasers' Fiesta (see March AR, p 36) went to Kevin VK3IR for the biggest collection of awards, and to Steve VK3CIM for the best.

Kevin's attractively presented display of more than 50 awards seemed to include every ZL certificate and trophy in the book.

However the club committee was disappointed at the participation and attendance, and has agreed that the contest will be "the first and last". Briefly, it was an unsuccessful experiment.

Meanwhile, the club will hold its annual trade day on May 6, and its White Elephant Night on Friday, June 16.

Club Secretary Doug VK3CCY will report on his visit to the Dayton, Ohio, Hamvention at a meeting on May 19, while on May 10 the club rooms will be the venue of the VK3 Division Annual General Meeting. The rooms will open at 7 pm to enable visiting WIA members to inspect the club's station and other facilities, including its museum of vintage and veteran radio gear. The latter includes the receiver used by Max Howden (then A3BQ) when he made the first amateur contacts by a VK with the USA and UK in 1924. This historic receiver is on loan from the Science Museum of Victoria.

Summerland Amateur Radio Club (Lismore)

President's Report (precis form)

Summerland Amateur Radio Club activities for 1988 centered around providing more facilities and services for members.

The ongoing project of refurbishing the club room continued. Toilet, lighting and parking facilities have been improved by the efforts of members willing to work for the benefit of all. Our thanks to all of them.

The club's tool kit now includes a digital multimeter and a temperature controlled soldering iron. These were suggested by members.

Repeaters: The Club continues to provide two 2 M and one 70 cm voice repeaters, also a 2 M packet repeater.

We are also planning another packet repeater and a six metre beacon.

We are most grateful to those members who work hard to install and maintain them.

Particularly, we thank Dave VK2YDN and Gordon VK2AGE for their individual efforts in providing us with a Packet Bulletin Board and an APLINK mailbox.

Nets: Our on air activity includes:
Two 80 m nets (Sunday Night and The Dawn Patrol) and the 2 m Friday night net.

The Club's "La Balsa" award is still being sought although the flood of applicants has diminished.

Social Activity: Apart from our usual series of dinners and field days, the year saw our first 'Hamfest'. The attendance was about as much as we could handle and succeeded in three ways:

We had a lot of happy customers;

We got rid of a lot of surplus equipment (ie junk!);

We made some money for the club, enough to pay for the work on the Clubroom and parking [illegible].

Public services: club members both as individuals and as a group assisted SES during the floods earlier this year. Our expertise was greatly appreciated by SES who presented us with a certificate of appreciation.

JOTA: Once again the club supported JOTA by establishing several stations and allowing many of the Scout and Guide groups in the area to participate.

Education: While the tutoring of newcomers and members upgrading their qualifications was left to individual members, the Club is aware of the slow progress of the DOTC devolvement of Amateur Examinations.

The club membership last year was 120. Strength flows from greater numbers. I'm sure that at some time throughout the year each of us has helped and been helped by other members. Sadly I must report the passing of four members; Harold VK2AWH, Sid VK2CSM, Joe VK2FSB and Bernie VK4FOS. We remember these past members who helped build the foundations from which the rest of us will move into the future.

Finally I wish to thank not only those members who have served officially but also all of the members who have helped the club by joining in any activity be it a net, social function, or working bee. Participation is the important thing. Thanks for being there.

Duncan
VK2DLR
President 1988
(submitted by the Secretary Jim VK2ESI, PO Box 524, Lismore 2480)
ar

NZ plans Pacific shortwave service

A 100 kilowatt transmitter could be beaming a shortwave service from New Zealand into the Pacific by the middle of next year.

The Ministry of External Relations and Trade said it plans to introduce such a service covering an area extending from Papua New Guinea to French Polynesia.

Technical details concerning the service had been decided and attention was now focussed on funding.

New Zealand first set up a Pacific shortwave service in the late 1940s using two 7.5kW transmitters in Wellington.

The service was discontinued following budget cuts in 1982 but the New Zealand Government decided last year that broadcasting to the Pacific should be resumed.

■■

SHOWCASE

Acme Releases RF Connector Adaptor Kit

National electronics components and cable distributor, ACME Electronics, has released the Greenpar 50 ohm Between Series Adaptor kit.

The kit comes complete with spanners, couplers and a selection of connector faces.

These adaptor faces include BNC, SMA, N, UHF and TNC

Using a coupler, these faces can be screwed together to provide the desired combination required by the user

The kits are housed in an attractive plastic case and are available from all ACME branch offices and agents, throughout Australia

To order a kit, quote ACME Part Number C47–50

Couplers in straight, Flange–mount and Tee styles are also stocked by ACME Electronics. Complete Between–Series Adaptors of many different combinations are available and can be ordered separately.

ACME has branches in Victoria, New South Wales, Queensland and South Australia, as well as agents in Western Australia, the Northern Territory and Tasmania

The company, a division of Hardie Technologies, distributes and supports a wide range of products from Kings Electronics, Belden Wire and Cable, Greenpar connectors and Grayhill

For additional media information, contact:

Ted Harnett
Product Marketing Manager
ACME Electronics
205 Middleborough Road
Box Hill Vic 3128
PHONE: (03) 890 0900

Breadboarding System

Harwin Engineers have recently introduced their unique breadboarding system using track sockets

The track sockets are designed to fit into a 1mm diameter hole and each has a small tail that can be used as a shorting link to the adjacent hole The tail can also be used as a test point and is suitable for the hook type testing leads The track sockets have a multitude of applications such as prototype working and class–room teaching of small electronic assemblies

Components such as resistors and capacitors can be easily inserted and withdrawn according to circuit needs.

The system is provided in a kit form comprising a pre-drilled board 160 x 110mm, 245 Track Sockets on a bandolier and an insertion tool. For users that already have boards, the Track Sockets are available loose in packs of 500

For details of the Breadboarding system (Code T1510-00) contact Clarke & Severn Electronics, PO Box 129 St Leonards NSW 2065

Surface Mount polyester and polyphenylene sulphide (PPS) Capacitors from Evox.

EVOX have recently developed two new capacitors for surface mount applications.

The MMC family is a further development from the leaded MMK polyester capacitor that has already achieved wide acceptance in Aus-

They offer improved performance over X7R ceramics or tantalum chip capacitors making them ideal for general purpose applications.

Their high insulation resistance (typically 10,000M) and low loss (typically 0.5%) makes them the optimum choice for bypass and coupling work.

The MMC is available with capacitances ranging from 1nF to 1uf and dimensions (L x W x H) from 4.9 X 2.5 x 4.5mm to 9.8 x 5.5 X 7 7mm

The SMC is based on new dielectric material, polyphenylene sulphide (PPS), which has electrical properties suitable for precision applications combined with a wide temperature range extending from -55°C up to 125°C. They can therefore replace NPO (COG, COH) ceramics in many applications and are suitable for operation in high ambient temperatures.

The SMC comes in capacitance values from 1nF to 0.47uF and sizes (L x W x H) from 7.3 X 3.0 X 5 0mm.

Both types are available in bulk packs or tape and reel

Further information is available from:

Ericsson Components Pty Ltd
PO Box 95,
PRESTON VIC 3072
TEL 03 480 1211
FAX 03 484 3645

Belden MAP Network Coaxial Cable

National cable and components distributor, ACME Electronics, has released two new Belden 75–ohm coaxial cables for MAP (Manufacturing Automation Protocol) networks.

Both cables meet IEEE 802.4 standards for broadband and carrier band signal transmission.

These RG–6/U–type and RG–11/U–type cables feature a unique shield design to provide the most effective protection against EMI that is currently available in a flexible coaxial cable configuration.

The Duobond Plus shield consists of a double–layer foil shield bonded to the dielectric core, followed by an aluminium braid shield and an overall foil that is 50% thicker than conventional foil.

The outer foil has a shorting fold which provides metal–to–metal contact for maximum shield effectiveness

Both cables also feature a specially blended foam polyethylene core that provides higher velocity of propagation and lower attenuation.

Typical applications would be in a manufacturing environment where effective shielding is necessary to ensure signal integrity

The RG–6/U–type cable is designed for broadband and carrierband drop applications from the cable trunk to individual workstations.

The RG–11/U–type can be used as either trunk cable for carrierband transmission, or drop cable for broadband and carrierband signal transmission.

ACME Electronics, the national distributor for the range of Belden Wire and Cable range of Kings Electronics, Greenpar connectors and Grayhill products, as well as manufacturing their own range of connectors

The company has branches in Melbourne, Sydney, Brisbane and Adelaide, as well as agents in Western Australia, Tasmania and the Northern Territory.

For additional media information, contact:

Reg Rowson
ACME Electronics
205 Middleborough Road
BOX HILL VIC 3128
TEL 03 890 0900

Type 3 Media Cable

Australian cable and components specialist, ACME Electronics, has released a Type 3 Media Cable from Belden Wire & Cable, that meets IBM specifications for 'ROLM' cabling

The cable is a 4–pair, 24 AWG solid conductor type and each pair has a unique twist–length which differs from the other pairs

Applications for the cable include local area networks or multi–user personal computer installations which are attached to a host system.

ACME Product Marketing Manager for the Belden range of cable, Reg Rowson said the Type 3 Media Cable is currently available in 305 and 500–metre reels

"Because each pair has a unique twist–length which differs from other pairs, a better performance is provided for network users," he said

The type 3 Belden Media Cable is ACME Part Number 1154A and is currently stocked by ACME branches and agents throughout Australia.

ACME Electronics, the authorised distributor of Belden cable, has branches in Melbourne. Sydney, Brisbane and Adelaide. The company has agents in Western Australia Tasmania and the Northern Territory

As well as Belden Wire and Cable products, ACME, who manufacture their own range of connectors, is also the distributor for products from Kings Electronics, Greenpar Connectors and Grayhill

For additional media information contact

Reg Rowson
ACME Electronics
205 Middleborough Road
BOX HILL VIC 3128
TEL 03 890 0900

OVER TO YOU

(Aboard "Mobil Flinders" at Gibraltar 8 March 1989)

North Atlantic Odyssey

The Officers on the "MOBIL FLINDERS" have written an article we thought may be of interest to readers

We are an Australian tanker - largest flying the Australian flag - currently stationed in the Northern Hemisphere, remote and at times, feeling forgotten The trip has some significance, it's been the first to Newfoundland, Canada - little place called Come-by-Chance, (not to be confused with the Oz town in Northern NSW) and the way things are shaping up probably the last as pressure is on to replace us with FOC (Flags of Convenience) labour !

Departed Mongstad, Norway (just near Bergen) 20 February 1989, light snow falling, gales forecast, 2c temp - get weather routing from Bracknell in UK (incidentally excellent service) and routed North of the Shetland Isles to miss the first Storm centre.

22 February - Mayday calls, Portugese ship with salt bound for Iceland with Koreans onboard in trouble, aircraft overhead watches it sink, seems lifeboat launched, drops liferafts, 40 ft waves, violent storm 11 winds, all hands perish. Later in day 200 miles to North - Spanish ship is sinking; reports Hurricane 12 winds. Routed further North, now at 61 degrees, 65 degrees is the Arctic circle, cargo temp is down to 8 deg C, no heating coils fitted, sea temp 8 deg C during the afternoon. Spaniard has sunk - poor sods.

23 February - more SOS calls, 3 ships in trouble, another gale blowing, huge seas (mountainous in fact), sea temp 5 C; have implemented cold weather precautions. Incidentally, 7 ships lost, damaged, grounded off Cape Finisterre in this storm. Weather classification "Fresh to Frightening" by all onboard

24 February - ship turned around to check cargo temp and assess storm damage. Main steam line has parted. No 1 foam monitor torn away from its supports, foot plating has disappeared or twisted out of shape, temporary repairs carried out, temp 1 C, ice forming. Liferaft demonstration at 10.30, in Games Room 20 deg C - well attended - we're no heroes. Sat Com system "died" in September, promised early New Year, still coming like Xmas. All Radio traffic via HF RTT/RTG through European CRS - Canadians asleep (?). Ice berg and International ice patrol warnings commence - incidentally, this was formed following the "Titanic" disaster in 1912 - all by morse Sparkie in his element! - telex copies mutilate owing severe snow/sleet static, "old faithful" (MORSE) the last link Which cretin said it was dead?

01 March, crossed the Grand Banks of Newfoundland, dense fog Ice alert rasied as ice pack has moved Southwards 50 N Miles, altered course accordingly Out of the fog and enter the Labrador current, temp plummeted to -5 C, sea temp -1 C, scanning for icebergs; brass monkeys everywhere!

Several attempt RTF calls, still can't raise locals, end up going via Norddeichradio in West Germany - marvellous duplex circuits - later find out from one of operators that transmitters were part of Grand Admiral Doenitz's U-Boat warning system - can see why, even after all these years - superb service given by station

02 March, first sighting of ice about 200 metres away, -8 C, sea temp - 3 C. Steam on deck so winches kept ticking over. Not far from "French" Islands of St Pierre and Miquelon - Canada made agreement so French can go fishing off these islands' locals call it rape of their fishing grounds; sounds like French in Pacific; the last Colonists! Not bad for a so-called republic. Stand by at 2030, the Bay is iced over closer to shore, the land covered with deep snow drifts Terminal supervisor later described this as a "MILD" winter, our comments unprintable.

03 March. Deck seal steam supply line has choked with ice, scrubber freshwater line is frozen. Ice on deck is 150 mm deep in scupper areas. Cargo whipped out in 24 hours, a RECORD for the terminal, FOC ships are up to 5 days discharging. Poor Lascars have no warm clothing, no heating on board, paid peanuts, according to Local Clinic, usually half end up there with frost bite and related problems - Shipowners haven't changed since days of sail, eh? Locals say these crews usually end up catching local fish - excellent cod, etc. to supplement meagre food rations - no wonder they get great mobs of fish. Funny, our guys aren't out there though, some fresh instead of frozen fish would make a change.

At completion, the Surveyor commented on the excellent working relationship between the engineering and deck departments Who knows? Maybe the amalgations of the two Unions will be successful after all! As a matter of interest, we are well received in ALL terminals We have had two assessments on performance, one said 90%, the second that we were in the top five

As Australians competing in the World arena, we're more than holding our own. If only we could accept a "bag of peanuts" instead of dollars, we would have a job for life. Shame this ship and its fortunes isn't published in the Australian media which seems to delight in denigrating OUR EFFORTS in the National Interest

"Thales"
J.F. Walton VK4CY/MM
PO Box 537
Mt Gravatt
4122

MURPHY'S CORNER

(apologies to VK8ZWM!)

Errors in last two issues

A number of errors ran the proof-reading gauntlet and survived it in the April issue. The most notable were:

Page 23	We didn't really intend to duplicate agenda item 89.09.03.
Page 31	(near end of page). Callsigns of the first three people listed are in order VK4KZK, VK1ZDX and VK8ZWM.
Page 50	Repeater 3 officer Arthur Trevaskis is VK7SE.
Page 57	Zero became O in 4WØPA, 3WØA and EL2LMP/40
Page 62	New members omitted were: GR Marsh Associate EMU Plains GE Morris VK2VKS Avoca Beach MP Reardon VK2XFI Ettalong Beach JA Richards Associate Sans Souci IL Rosser VK2PUP Wyoming JR Simon VK2XGJ Brownsville A Whittaker Associate Wingello J Zenner Associate Moss Vale
Page 72	The advertisement for Stewart Electronic Components is on page 28.

In the article by VK5BR on page 38 of April AR, there are three errors in Figure 1 L3 is 150 micro henries, not millihenries. Gate 1 is pin 3, gate 2 is pin 2; these were inverted. Also Reference 1 is relevant specifically to the last sentence of the second paragraph "A high drain ..... transistor current" (Ref 1).

Further back, in the March issue, in the formulae associated with the diagrams on page 7 wherever cos WA appears it should be cos wt. The article "Topical Technicalities" was inadvertently not attributed to Lindsay Lawless VK3ANJ who is of course its regular author.

QSL Postage

The postal rate increases which came into effect on February 13 have probably not aroused much interest among radio amateurs in general. After all Australia Post told us all that the rate increases were for overseas post only and were necessary since there had not been an adjustment since March 1988. What those announcements failed to point out was that the "Small Packet" preferential rate was, from February 13, eliminated. So who cares? And what's a "Small Packet" anyway? I expect Australia Post expected that kind of response. I also suspect that not one of the QSL Bureaux, major users of the "Small Packet" service was consulted or advised. And, I bet that almost nobody knew that, for one category of "Small Packet" the rate increase was just one hundred percent!

According to "The Postal Guide", the Small Packet category permits the enclosure of "QSL cards (amateur radio call cards)" (paragraph 10.97.2). This is a specific reference because in paragraph 10.56.1, QSL cards are not acceptable as printed papers. Nor are QSL cards classified as "Greeting Cards" because, according to paragraph 10.41.1, a greeting card must "be in an unsealed cover endorsed "Printed Papers" and bearing no more than five words of greeting added by the sender".

Result, tripple whammy - courtesy of Australia Post.

Now a single card cannot be sent by other than "International Letter Post". And at the new rates that is 75c for Asia and 85c for everywhere else. Oh, but you want AirMail? Then it's from 60c up to $1.10 depending on the area. Previously the rates were 45c or 56c (seamail) or 55c to $1.00 for airmail. And of course, even at the old rates, it was expensive so most radio amateurs used the Bureau.

Well, if the country of destination was one of the popular ones, U, ZL, J etc the cards were done up in 500 g "Small Packets" since this was the maximum mass allowed for this category. The rate then used to be $1.58 for ZL and J and $1.85 for U and other distant call areas. Now it's $2.50 and $3.00, around 60 percent up. Of course for W, VE and most other countries cards go to a variety of bureaux depending on the numerical suffix. So these often went in smaller "Small Packets". Up to 30 cards cost 57c for Asia and 63c elsewhere. How much now? Over the 60 percent now at 95c or $1.20. But, and here's the real beauty, if the bureau wanted to send around 85 cards, a sensible number to have regular clearances for the less popular bureaux, it used to cost 90c to VS6 for example and $1.00 to, say, LU or PZ. But now it costs $1.50 for VS6 and only $2.00 for the others. Since "the others" are the majority, that's an increase of 100 percent!

This totally unreasonable imposition has been made without any thought for a large group of users for whom a special category at preferential rates had been created. And, cunningly, Australia Post has still included the words "Small Packet" on the rate card. But, "Small Packets" are no more. There is no advantage in making up packets of 500 grams of cards. It might as well be a few cans of passionfruit pulp for your granny in Bulgaria. It'll cost you just the same.

The VK2 Bureau expects this stroke of the pen to cost an extra $1000 or so in a full year, a cost which has to flow on to the members. It looks like less service at twice the cost to me.

Keith Howard VK2AKX
PO Box 18
Teralba 2284

Contest Rules

The following is a portion of a letter written by me to the Federal Contest Manager and which was forwarded with my entry in the VK Novice Contest held in June, 1988.

As the Immediate Past Federal Contest Manager I had much soul searching as to the protocol involved in seeming to make criticism of my successor. Since I am now merely an ordinary member of the WIA I have taken interest over more than 28 years in trying to improve the contest situation in Australia and also that I feel most strongly about the points raised. I decided that I should be able to air my views.

As a courtesy, I advised Frank VK7BC that I would take this action, thus allowing him the privilege of replying in "Amateur Radio" at the same time as this letter is published, should he wish to do so. I have not yet received a reply (March 1989).

Thanks for running the contest, which seemed to be fairly well patronised. There seemed a lack of Club stations however, and few stations in the CW section. I did not operate on CW myself.

Just a few comments regarding the rules generally. (Some will also apply to the Remembrance Day Contest Rules).

Lack of CW operators?

Why change maximum allowed CW speed? I should have thought that a decrease could have been advantageous. The speed has been deliberately kept low to try and entice operators who would not normally use morse. Such persons are more likely to try if the speeds they hear being used are fairly slow. I am sure that speeds approaching 15 words per minute would frighten them off. 15 wpm is faster than they needed to get their ticket, even for FULL call stations. What about the unskilled NOVICE CW operator?

Last paragraph in rules entitled "Operator"

PLEASE! Why this addition? If an operator has two callsigns he should be free to use both provided his use is legal. By using both his available callsigns he is doing everyone else a favour by increasing activity. He is not cheating, nor does he receive an advantage. Furthermore, an operator using two callsigns is never going to win any section of a contest. To gain a large score one must go hammer and tongs with only one call sign. Using two logs, even more if alternating callsigns can only slow you down.

Such extra callsign(s) provide more activity in the slower contests, such as the VK Novice and benefit others. In busier contests such as the "RD" it also helps activity and challenges top operators who have to work harder to work the extra stations. It helps to have more stations on the air as even top operators in a big contest like the Remembrance Day are at the end usually scratching around to find just one more station to work.

As regards "CLUB" stations, there should be as many operating as possible. Each Division should be encouraged to participate by airing all the official WIA callsigns available. Remember, most do not have stations set up solely for WIA purposes. In most instances private stations are used with WIA callsigns. Those operators, who so kindly operate on behalf of their Division, are penalised by not being allowed to put in a log using their own private callsign. This is wrong.

Summarising, we should encourage as much activity in all contests as possible. "The More The Merrier".

Remembrance Day Contest Rule Changes

Why re-institute RS(T) Reports in this contest? Such reports are basically meaningless in this and most other contests. I for one will rarely give a report other than "59" in a contest and that goes for virtually ALL other operators. Just listen to a contest and check the logs sent in. With any MAJOR contest (and the "RD" is one) if a station can even get through most of the QRM his signal must be S9. If you don't get his serial number perfectly, he is not R5 and the contact is invalid anyway. So, arguably (I believe definitely) the RS(T) numbers are superfluous. Back in the days when Wally Watkins was FCM, reason was seen on this point. Most operators seemed to appreciate deletion of the signal report, requiring serial number only. All that should be required is proof of exchange and the serial number provides that. No regulations require that we exchange Signal strength reports for any QSO. In my time as FCM I only ever had one station complain about the lack of RS(T) reports and that on the basis of seeking QSL cards for awards. Few operators QSL their contest contacts and to chase Australian Awards in an "RD" Contest!!! I ask you???

Double Points for CW??

Why not give the CW operators 10 times or 100 times the points for each contact? That would still make about as much sense. This point really worries me for several reasons. Firstly, with the change in the scoring format for the Remembrance Day Contest ONLY ONE POINT PER CONTACT "either phone or CW" is NECESSARY, otherwise it unbalances the whole scoring system. Anyone carefully looking at this and following the evolution of the system over the years should be able to see what I mean. The single point per contact approach is needed, because otherwise the formula used to determine the winning Division produces an unbalanced result.

Obviously in most contests there are separate Phone and CW sections. If you are in the Phone section you compete against other operators in that section only. Likewise for the CW section. Why then call for this needless approach? Whilst it is in fact damaging to the finely balanced RD system I have yet to hear logical explanation for double points for CW operation in any contest. If it is because that mode is harder to operate, why then do CW operators claim it is easier to get messages through QRM?

(They say that CW is more effective. And I don't argue against that either)

Re-introduction of the "OPEN" Section in the RD

Why?? Are we neither fish nor fowl?

Under the rules an operator can enter either a Phone log, a CW log OR BOTH. Neither this year's nor last year's rules preclude that approach. For many years this was the case until the idea of an "Open" section crept in. Is there a logical explanation as to why?

The rules state there must be a "reasonable mixture" of the two modes. Will the contest manager reject a separate log entry of 10 CW contacts and a separate log entry of 500 phone contacts from the same station? As stated above, the rules do not preclude such an entry. Both logs obviously qualify.

Why then reject an "Open" entry with 500 phone and 10 CW contacts? This approach does not make sense to me. It should not be possible for Valid QSOs in any section of a contest to be disqualified by a contest manager. This whole matter requires another re-think.

The abolition of the "Open" section in the "RD" brought very few complaints. I would like to see a list of callsigns of the "many requests" for its return to be able to judge what percentage wished reversion to what I would describe as a "Hodge Podge" of sections, aggravated by VHF having been set aside as a separate Category.

Please consider my comments carefully. They do not reflect ill will, but merely try to ensure that our contests are kept on an even keel, as has been my aim for so long. This particularly applies to the Remembrance Day Contest which is surely something special. Even now it still needs a modified system of scoring, but that is a subject to deal with separately.

I will be interested to see what other contest-minded members say regarding these various aspects of contesting. Open discussion on such matters helps to make us all better informed.

Ian J. Hunt VK5QX
9 Dexter Drive
Salisbury East 5109

P.S. I shall be overseas and unable to participate in the 1989 RD contest.

Vigilantes?

Received AR March 1989 today, read it through for the first time and as usual, enjoyed it - particularly the larger type, as the years roll on here and I often forget where I left my spectacles.

Letters (P60) really got to me with the publication by VK3CIS of a system in VK7 whereby the Central Highlands AR Club has the temerity to fine members for "sloppy radio procedure". Is this area not covered by DOTC regulations in an adequate manner?

It is unlikely that I will visit VK7 and even more unlikely that I would join the CHARclub - in the unlikely event that I did, I would defy the club to extract so much as 20 cents from this licensee for a minor misdemeanor.

Certainly, in all VK states I've visited, there are examples of "sloppy operation" from time to time usually cured by an off air chat - as a rule, it seems that the hobby is self regulating and the last thing we need are self appointed "vigilantes". Haven't we (all Australians) had a gut full of Governmental abuse of authority? We certainly don't need a VK7 replica.

B. Barnays VK6CH
12 Brockmill Ave., Beechboro, 6063

"Q Code" On Phone

I must beg to disagree with Chris VK3CIS on the use of "Q Code" on phone (AR March 89, P60). This code was used by American telegraphists to accelerate the transmission of commercial traffic. Its use on phone is faintly ridiculous and can be taken by outsiders as an effort to state that the user belongs to some elite society.

Self discipline ensures that an operator does not swear on air and should ensure that "Q Code" is not used. The Central Highlands Radio Club of Tasmania merely enforces this as a "fun" method of raising a few cents towards Club funds. Using "Q Code" on phone is equivalent to using the old CB language, so, Chris, the best way to memorise it is continual use of the key.

With a big ten four to you, good buddy.

Bob Jackson VK7NBF
Falmouth House, Falmouth 7215

Reasons Why

I write in reply to the letter from Chris VK3CIS (AR February, 1989).

I hardly think that a small group of VK7s not using Q Code is going to have a world-wide impact. One only has to listen to any DX phone band to know it will never go out of use, and we will never be able to forget it.

We in the Central Highlands Amateur Radio Club of Tasmania choose not to use Q Code on phone, and make it a fineable "offence" for two reasons.

1. It would eliminate over-use of it on phone;

2. It is a sure money-raiser for club funds - Q Code violations averaged 25% of "offences" 10 months after the formation of our Club, and 80% initially.

QRX a moment, I'm getting QRM from the XYL because this QSO is causing QSB of the TV sound and picture, QSL?

What's wrong with, Standby, the wife says I am causing the TV to fade, OK?

Give me plain language any day!!

Bob Geeves VK7KZ
President CHARC (Tas)
28 Hamilton Street, West Hobart. 7000

Field Days & the Amateur Spirit

What has happened to the Amateur Spirit for Field Day participation and activity?

For last year and this year (March 88 and 89) in the John Moyle Field Days, I made a concerned effort to participate in the spirit of the event.

For 1988 I made it a Family Holiday and hired an onsite caravan over at Stansbury on Yorke Peninsula in SA. Stansbury is about 70km across the gulf from Adelaide. You can see Mt Lofty and access CH7000 with a hand held from the beach side Caravan Park. Just far enough away from the "Alligators" who run 100 Watts on 146.500 MHz.

I took HF, 6M, 2M, & 70cm, all modes with antennas to suit each band, a HF multi band dipole, a 2 element Quad for 6M, a 5 element beam for 2M, & a 10 element for 70cm.

Good signal reports were exchanged with the stations worked on the VHF Bands, with adequate reports on the appropriate HF Bands used for day or night. The number of VHF participants worked was disappointing 12 to 16.

It was a "FLOP"! My new wife and stepson who went to see how exciting Amateur Radio Contests are, were disappointed. My wife ended up knitting instead of log-keeping, and John played on the beach.

Sue said it was a waste of money on the caravan, and petrol on the trip over there, I could go on my own next time!

This year, 1989, I was less enthusiastic. On Saturday evening I fitted 6M, 2M, & 70cm using magnetic mounts on the car, and a 7MHz whip on the towbar. The car looked like an "Echidna" my wife said. With young John on board to "play Radio" with Dad, I visited the ELIZABETH AMATEUR RADIO CLUB (VK5LZ) Field Day site, in the hills behind Elizabeth.

After a chat and a look at the set up, with only 6 amateurs there, I drove up to an elevated site on the Kersbrook Rd, not far from Mt Gawler. After working VK5LZ on 6M, 2M, & 7MHz, the Barossa Radio Club VK5BAR at their Tanunda site, on 6M, 2M, 70cm & 7MHz, plus a few other strays; that was it on VHF! A total of 12 contacts.

I had noticed that 7MHz was chock a block, so stayed there for another 20 contacts, including several ZLs. By 9.00 local, John had fallen asleep in the back seat, so I returned home. 20 contacts on 7MHz in 40 mins, 12 contacts on VHF in two hours!

On the Sunday, as the weather was delightful, a barbecue picnic lunch was decided upon at the National Conservation Park, some 20km from Elizabeth. I could "play Radio" for the rest of the FD contest in the afternoon.

After a nice BBQ lunch the HF multi band dipole was strung up between a couple of gumtrees, the VHF magnetic mounts attached to the vehicle. Another "FLOP". 6 contacts on VHF. There was nothing wrong with the site RF wise. Four repeaters could be accessed with the whips, Adelaide 7000, Houghton 6850, Barossa 6525 & 8425/70cm; the 6M Beacon was also good strength.

The rest of the afternoon was spent on 7MHz, "Ragchewing" 6 stations and extracting contest numbers from them!

A total of 12 contacts !

What's wrong with today's Amateurs? Are the other states as poorly supported as VK5? I would be interested to know.

I have been a licensed Amateur for 24 years, and have been "Fiddling with Wireless" for longer than I care to remember. In the 60's when I was first licensed and joined the Elizabeth Amateur Radio Club we had some wonderful Field Days.

A big 10kVA Diesel Generator, Fridges for the beer and coke, 6 to 8 big tents, TH3s on crankup masts, RTTY, and gear galore. There was music and singing for the wives and kids and a portable toilet.. . Sheets and sheets of contest numbers had to be gone through and made sense of, something like 2000 QSOs. Yes flies and dust and everyone tired out by the end of the day

I don't think it will ever happen again, nobody wants to be bothered!

They would rather sit home in airconditioned shacks and let the Black Boxes talk to one another with computer controlled "Packet"!

Steve J. Mahony VK5AIM
19 Kentish Road, Elizabeth Downs 5112

40 Metre QRP

I wish to comment on the possible proposal to utilise 7.030MHz for packet network communications (O to Y AR 2/89).

This frequency is the international CW QRP working frequency. (See 1984 callbook P179).

Enthusiasts experimenting with low power worldwide CW communication, often using home built crystal controlled transmitting equipment can be found on this frequency.

Like packet radio, QRP CW is a growing facet of amateur radio. The CW operators QRP Club, with 130 members recorded a growth rate of 20 per cent last year.

I would suggest a frequency above 7 040MHz as being suitable for the packet network. Listening has revealed that there is a high level of CW activity able to justify a 40kHz wide CW only setment.

40m is a crowded band and all IARU member societies would do well to encourage the use of narrow band modes, (eg CW, RTTY, packet) and the use of only moderate power levels when the band is crowded This should allow the band to be less crowded and allow the greatest number of people to enjoy QSOs on this band.

73, Peter Parker VK6BWI
C/- PO Witchcliffe 6286

Contests And New Members

The letter "May I Be Permitted" by Terry Robinson VK3DWZ was interesting I can see what he is getting at. To me there seems to be an ever-increasing number of contests at weekends. I do not doubt that contests and sprints etc have devotees I believe there are some in our fraternity whose sole interest is in contests and virtually live for them. But from a SWLs point of view to hear nothing but Hullos, goodbyes and best of lucks intersected by a string of numbers being rattled off like rounds from a machine gun could discourage SWLs, who are prospective amateurs, from joining our ranks. The greater our numbers the greater our strength and the more chance we have of retaining our bands and perhaps gaining further frequency allocations

While points 1,2 and 3 are quite valid, point 4 would be difficult to "enforce" as there are many countries that have their own varieties of contests etc., however, I would like to add to what VK3DWZ has said and suggest that for a contact to be counted communication between the contestants must last at least 2 minutes if not 3.

To change the subject, I would like to make the following comments and suggestions.

1. Please do not divide our bands up into segments for "exclusive use" by "Amtor" and "Packet" (the buzzsaw brigade) as these bands are for the use of all amateurs using any legitimate mode of transmission. I for one like a good rag chew.

2 I suggest that you consider membership of our organisation where the applicant does not receive a copy of AR

3.As a means of introducing more people into the hobby of amateur radio, I would suggest that you push for a licence free of morse - maybe using reduced power allowing operation on the last 100 kHz of the 20 metre band, the last 150 kHz of the 15 metre band and the last 300 kHz of the 10 metre band. The holder of such a licence to hold it for a period no longer than 2 years. More on this later if you like

Graham J. Muirhead VK4WEM
23 Cunningham Street, Warwick. 4370

More Contests?

I couldn't agree more with Terry VK3DWZ. My brother KW7Z, Phoenix, AZ, also gets upset with contests on weekends when we have time for "chewing the rag" and are constantly interrupted with "CQ test" (No request for the Freq). I left CB and became a ham, and this was one of the reasons.

When I visited Australia in 1979, I listened to the bands and couldn't believe what I heard coming out of the USA. It was a "wall of sound" on an average weekend with no contest.

I wish there were rules to limit contests. I feel sure, if a poll was taken on how many hams worked contests, it would open a few eyes on how many wish the contests would just vanish. Can you imagine if 50% were contestors what a mess we would be in. (The USA has almost 500,000 hams) that would mean 250,000 would be on at the same time, nuff said.

Gene Gain ND5H
2514 Manila, Houston TX USA 77043

Emergency

So much for contests, they do populate the bands, but they also can have the opposite effect on someone requiring help.

At 1150am Qld time today, I came across a station (VK2PLT/m) calling CQ the Sydney area. So what, you might say, but later I heard him saying that his XYL had broken her leg and he was trying to get someone to call her sister

I called several times but he apparently couldn't hear me. The next best thing to do was to look up the call book and ring his home number, hoping someone else was there, but the phone rang out.

A short while later the signals faded and I couldn't hear him at all

Accident or not the amateur service is populated by very few who know the correct calling procedure for such an event.

I'm open for correction and without my copy of the Regulations I quote from memory - MAYDAY requests help because the ship/aircraft is going to sink/crash with a good chance of loss of life. - PAN PAN requests help because someone on board has need for urgent medical support but there is no imminent danger of crash. - URGENCY requests help or attention to the caller from other stations The station needs assistance normally because someone near has a problem and may need medical assistance.

I feel that had VK2PLT/m used either PAN or URGENCY at the time of his call instead of CQ, he might have gained assistance faster

I do hope his XYL has recovered and that amateurs in general take a look in their Regs for Emergency Procedures

Nick Quigley VK4NFL
PO Box 880, Rockhampton. 4700
ar

SILENT KEYS

Harry Cliff VK3HC

Old timers will be sad to hear of the death at age 79 of Harry Cliff, VK3HC, on December 22, 1988 after a long illness.

Harry was first licensed in April 1928 and was active on air for 60 years. Prior to gaining his licence he had a strong interest in SWL and his earliest cards (now in the WIA archives) date from 1925. His early experiences included being one of the amateurs who supported the 1929 air race.

Harry had a lifetime involvement in the electronics industry. He was instrumental in the establishment of Trimax Transformers in 1935 (eventually sold to LM Ericsson) and purchased Aegis Pty Ltd in 1960 Aegis manufactured amongst other things a range of cable fault locators, bought in large volumes by the PMG

We regret to announce the recent passing of

Mr W E Bischoff	**VK2LZ**
Mr J E Weildon	**VK2MCO**
Mr Harry Cliff	**VK3HC**
Mr Bob Cunningham	**VK3ML**
Mr C D McQuillan	**VK3ACD**
Mr Lou Olsen	**VK4KLO**

and later Telecom. Harry sold the business and retired in 1975, moving to Point Lonsdale with his wife Melda.

Harry was one of the founding members of the RAOTC and became its secretary on the death of Ivor Morgan. He retired from this position in 1985 due to ill health. During his life he established many long and valued friendships through amateur radio, and was a lifelong member of the WIA. He will be sadly missed by all who knew him.

Deepest sympathy is extended to his wife Melda and his children Janet and Jonathan.

Bill Gronow VK3WG

Bob Cunningham VK3ML

Very outgoing, hard–working, kind–hearted, known as a gentleman by all. These words describe Bob Cunningham VK3ML, who suffered ill–health for some years, and passed away at his Malvern home on March 31, 1989.

Bob was first licenced in 1928 and a good DX man. His early WIA activities included being Contest Manager and Technical Editor for Amateur Radio magazine.

His peers described him as a "specialist leader" who took on tasks and did them well. This description typified Bob's involvement in our hobby for 60 years.

The WIA before WWII had tried to interest the armed services in forming a Wireless Reserve with radio amateurs being its members. The idea was rejected by the Army and Navy, but adopted by the Air Force. An RAAF Wireless Reserve was formed around 1931 at the instigation of Howard Kingsley Love. Without Bob picking up the threads the Reserve would never have got off the ground. He became its Commanding Officer, taking on the job with characteristic great enthusiasm.

When war broke out in 1939 he became a Signals Officer and during the war rose in rank to Wing Commander.

After hostilities ended Bob held the office of WIA Victorian Division President from 1947 to 1950.

He was an analytic chemist, but his knowledge and technical ability with radio saw him more and more involved in the business side of audio and communications.

Bob Cunningham VK3ML

Through his company R.H. Cunningham, he imported Eddystone receivers and was agent for a number of well known brand names. A trip to Europe with his wife Kay resulted in his company obtaining and agency for the Geloso range of gear from Italy. This included the famous Geloso VFO which was widely used by radio amateurs.

R.H. Cunningham also served recording studios and broadcasting stations with a range of microphones and headphones.

He was highly regarded by the management of those overseas companies which entrusted their representation in Australia to him.

Through dedication and effort Bob Cunningham founded the Radio Amateurs Old Timers Club and was an active member of the RAOTC. He was always most anxious to assist anyone in need of a helping hand. In recent years Bob provided assistance to the Kooyong Radio Club and was a source of encouragement for its blind members.

Sharing his years of experience the club benefitted from advice on how to run its meetings and set policy, and he became a very vital and interested member of the club.

Bob Cunningham demonstrated his specialist leadership capacity numerous times in serving his fellow radio amateurs. He was a person who wanted to be in the front of things and make it happen.

He will be sadly missed and long remembered for his contributions. Sincere condolences to his wife Kay, daughter Ann, son Jimmy, and to his many friends.

Jim Linton VK3PC.

Ron Guttormsen VK4RL

It is a sad duty to inform readers that Ron VK4RL passed away suddenly on Tuesday 14th February 1989. RTTY operators will remember Ron as the 80 metre relay officer for the Monday night Qardata News Service – and as such, he will be sadly missed.

Ron was born in 1921 and obtained his amateur radio licence in 1946, so he was quite an Old Timer. A long term member of the WIA, he acted in many capacities – member of WIAQ Council, Librarian and QSL Officer – and was awarded Merit Badge No 10 for his services. He found pleasure in making his own equipment and in later years became quite proficient in computers, RTTY and Packet. His favourite saying was, "There are not enough hours in the day to do what one wants to do."

After retirement Ron and YF Dorothy led a full and active life, concerning themselves with many community interests – Meals on Wheels, Senior Citizens, Caravanning (Past President and Life Member), School of Arts – but leaving some time for his favourite hobby, wood turning.

The WIAQ and many friends extend their deepest sympathy to Dorothy, their sons Bevan and Robin and granddaughters Deidre and Kaylene.

Stan West VK4WY, and Alan Shawsmith VK4SS.

Lou Olsen VK4KLO

I feel sad when a devoted Radio Amateur slips silently away. It was 24 November 1988. I first met Lou when he started the Cairns Amateur Radio Club in September, 1968. Lou devoted two good years making a success of that club before going back to sea. (We taught ourselves how to become Radio Amateurs with a little help from outside)

When he returned from sea he rejoined the CARC and later TARC, and for the rest of the time assisted many Amateurs in North Queensland by making or turning out articles on the lathe, where his expertise was never challenged.

Born in Denmark on 4 October 1906, he joined the Merchant Navy at 14 years of age, and in 1928 operated under the call sign OZLO. During the war years he worked for the Resistance Movement. It was 1951 when he arrived in Western Australia, and eventually came to Townsville in 1955, working for the commercial Radio Station, 4TO.

There he met Doris who came from Charters Towers. In 1957 he became a Naturalised Australian, and later married Doris. It must have been about 1972 before Lou became active as a Radio Amateur.

If you come north you may still see the cottage just south of Cairns. All the aerials are still there just the way they were when he went QRT!

Ian Baty VK4AFC
423 Draper Street
CAIRNS 4870

Jim Kirk G6ZO

Many amateurs throughout the world will be sad to learn that Jim Kirk died on the 8th of March 1989 after a fairly short illness.

He was so well known through his many skeds nearly everyday as a dedicated Morse man – and what a perfect fist!

A number of his radio friends had the pleasure of visiting his home where they were warmly welcomed by Jim and his wife Denise.

Some of his VK friends were privileged to meet him during his visit to VK in 1985 when he spent several weeks with his close friends Barbara and Ray Carter VK2HC (silent key). During the visit he had the call VK2FIP and worked many of his VK and worldwide mates.

Jim was the son of a missionary to China where he was born and received his early education. His Chinese language was apparently pretty good. I was amused during his visit when we took him to lunch at a Chinese restaurant where he and the Chinese waiter became long lost buddies!

During his business life he worked and lived in many countries and had amateur calls including XAZO, CE3ZO, ON5ZO, FØAJB and G6ZO/HB.

He came on the air as an amateur in 1935.

During the Second World War he served in the Royal Corps of Signals and had many tales to tell of those years. In the early days he was able to show the "top brass" that some "ham"

HAMADS

RADFAX2: Hi Res radio facsimile morse & rtty program for IBM PC/XT/AT on 360K 5.25" floppy + full Doc. Need CGA, input port, SSBhf FSK/Tone decoder. Has re-align auto-start view save print. Also "RF2HERC" same as above but suitable for hercules card, and "RF2EGA" for EGA card (640X350 mode). Programs are $30 each + $3 postage ONLY from M. Delahunty, 42 Villiers St., New Farm 4005 Qld. Ph. (07) 358 785

WANTED NSW

Manual/Handbook for TECH model TE-20D Signal Generator. Photo Copy Pay all costs. A. Walsh L20181 QTHR

Valves 6A8G 6J8G 6B6G 6U7G 6V6G 5Y3G for restoration of vintage RX's for pensioners. New boxed, or good used.
Jock VK1LF QTHR
Ph. (062) 866 920

Kenwood TS600 6MTR All mode TXCVR or similar. Also Kenwood 70cm all mode. Both in good condition. Ph. (02) 982 4457.
Doug VK2XGX QTHR

Handbook for Heathkit SB620 "Scanalyzer" refund for postage and photocopying etc. Please help!
VK2FHF QTHR

The Geelong Amateur Radio Club wishes to purchase both a 6m and a 2m transceiver each capable of SSB operation.
Ph. A.H. (052) 823 167.

AVO valve tester CT160. Handbook to buy or copy. Collins KWM2 handbook and 6AZ8, 6BN8, 6DC6 valves.
David VK3BFB Ph. (03) 587 1593

WANTED QLD.

Copy of, or information on a "Voltohmyst 2A56074 test meter by AWA Ltd. Sydney" including wiring diagram, or loan of such. Returned after perusal. Reimbursement of costs. Please phone (07) 284 6432. R Male, 13 Henzell St., Redcliffe 4020

EIMAC 3-500Z tubes (pair if possible)
VK4EBV, Tel. (07) 354 3779 after 5 p.m.

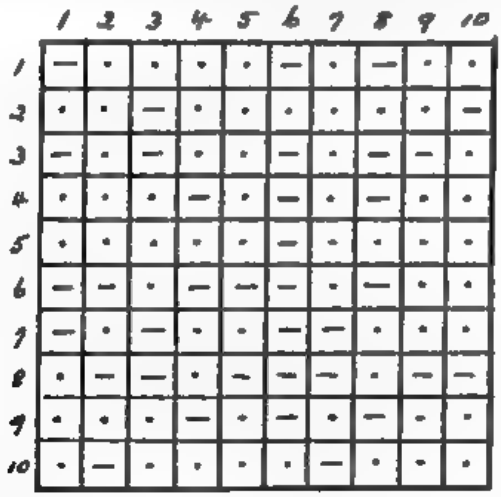
WANTED SA

Back Issues AEM relating to Yaesu 757GX - RS 232 interfacing, appearing 18 to 30 months ago. Fax - RTTY- Morse Software Programmers with source code for porting to Macintosh environment.
Phone (08) 497 905 Bill.

Info on converting Hygain 5 or Expo Bushranger CB to six meters SSB. Any details to Alan VK5BWG QTHR
Will reimburse any costs.

Answer to Morseword 26

ACROSS; 1 dice 2 fist 3 king 4 vend 5 sues 6 gore 7 cats 8 poem 9 stare 10 rile
DOWN: 1 cab 2 hart 3 wipe 4 skite 5 sited 6 noon 7 hunt 8 taker 9 eased 10 rife



Obituaries (continued)

influenced transmitters or receivers were far superior to the then huge and heavy army equipment. Later he was sent to Algeria to establish the North Africa army HQ station for high speed communication back to London HQ.

While in Algiers he met the family of his wife-to-be, Swiss/Scottish vineyard owners. He married Denise in Algiers in 1948.

There is much more than could be written about Jim but space here is limited. He will be very sadly missed and already hundreds of letters of sympathy are being received by Denise.

If Heaven were to appear on the DXCC list, Jim would have one of the first calls to be issued there!

[redacted]

USSR Callsigns

The month of May brings with it some strange callsigns from the Soviet Union.

It seems during this month every year the E prefix is aired to commemorate the end of World War II.

Callsigns starting with EU are in the capitals of the 15 Russian Republics.

Those with EV identify stations in the capitals of the 20 autonomous republics.

Hero cities have EW, and stations in cities with former guerilla activity use the EM prefix.

Cities which were awarded medals for their contribution to victory in the war have EO prefixes.

It is easy to determine the Russian republic by the letter after the number. These are: A, N, V, W or X equals UA. While B, T, V or Y equals UM.

Other letters identify the republic as usual. The DXCC country is the same as the Russian republic, except for Russia itself: you must then refer to the number in the callsign - 2 is Kalingrad; 1,3,4 or 6 is European Russia; and 9 and Ø are Asiatic Russia.

HAMADS

WANTED WA

Crystals Wanted for 6900 repeater CH to suit FM828, ETC TXCVR (TX 18.2875, RX 45.400 MHz) in exchange for pair similar crystals on 6675 or 6850 channels.
Peter VK6BWI QTHR

WANTED TAS

Handbooks for Belcom Liner 430 MHz SSB/CW transceiver and Tempo 2002 2 metre Linear amplifier - Urgent.
Mike VK7MC Ph. (002) 652 715.

TO SWAP NSW

Yaesu 70cm module to suit FTV707 or FTV700 for a 6 metre module to suit same: 70cm unit has had little use.
Phone Peter VK2BIT (042) 833 743 after 6 p.m.

FOR SALE ACT

Tower, 14m, wind-up with TH3jnr and rotator with round controller - Diawa $700 ono. Contact Geoff VK1KP
Ph. (062) 950 887 a.h. - transport to Sydney arranged.

FOR SALE NSW

Keyer, Katsumi EK-150, Iambic paddles 12-240v. $100. Toyo VHF/UHF twin needle wattmeter $75. Daiwa HF-UHF lo-loss antenna switch $25. VHF mast-mounting hardware $25.
Larry VK2OY (02) 949 3124.

"Farnell" PSG52OH Signal Generator 520meg. AM FM Sinad, C/W porta pack $4000 ono. "Farnell" AMM-B Auto dev. mod monitor incl. Int. D.C. Supply $2250 ono. "Helper" "Sinadder" sinad Sig-tracer Ac-Audio V. $550 near-new equipment manuals - incl.
VK2YDA P.O. Box 333 Finley 2713

Yaesu FT102 with MDI Mic. WARC Bands. Original owner. New June 1984. Licensed amateurs only $1100
VK2ETF (049) 454 989.

ICOM 740. Very little use - require minor service. TET HB-35C 5 element Tri-Bander. Has been in store for past 3 years.
Offers to VK2BZM (02) 498 2259.

SM-220 Monitor $550, MD-1 Base Mic. $130, CA-35DX 5 Ele Tri-band Vagi 80ft. cable $450, Emotator 105-TSX extra clamp (new) 57ft. cable $400, SP-520 Kenwood $50, Multi tester meter Q1140 (new) $75.
Deceased Estate VK2MCO. Mrs P Welldon 11 Desmond St Cessnock (049) 90 4468 or Ian VK2PKB (049) 32 8935 after 4.30.

Yaesu FT209RH 2m hand-held, HL35V Power amp, speaker, mike, battery packs, antennas, etc. $500.
Phone (02) 602 2085 VK2MSA QTHR.

Tower 10 metres plus rotator $200.
Ph. (02) 610 3341 a.h.

FOR SALE VIC

Icom IC-751 H.F. all band transceiver and general coverage receiver c/with IC-HM12 microphone. Excellent condition $1350.
Stan VK3BSO QTHR (03) 787 3479.

Books. Some collector's items including ARRL Hbks 1946-72, RSGB Hbk 3rd ed, many historic textbooks.
Estate late Max Hull VK3ZS.
Phone (03) 836 7097

Icom 745 HF transceiver. General coverage receiver has FM, Electronic Keyer, Narrow CW filter fitted plus PS30 power supply IC-SP9, External speaker SM6 Desk-Mic. $2300.
Phone (03) 726 9222.

Deceased SWL Estate.
Yaesu FRG 7000 with FRT 7700 ATU $550, Kenwood R1000 $600, and JRC NRD 515 with speaker, 24-channel memory unit, and JRC 505 pre-selector $1500. Also MFJ-959 ATU/preamp, MJF-16010 random wire tuner and Palomar FL-4 audio filter. All with instruction manuals.
Ken VK3AJU (03) 527 9029 A.H.

Kenwood TS4305 150kHz - 30MHz. All bands, SSB-FM-AM-CW, CW-AM, filters, mobile mount, Mic. Numerous features, manual. Very good

condition $1150.
Andy VK3UJ (03) 735 3335.
Licensed amateurs only.

FOR SALE QLD

Antenna Tuner H.F. ex Aircraft, remote switching adjustable L&C $35. Marconi Mono Sync Decoder, suit A.T.V.? $20.
VK4AIZ QTHR (07) 391 5526

FL2100B Linear 10/80 Metre mint cond. handbook $700.
John VK4ET QTHR (07) 269 3942 anytime.

Yaesu FTDX401 Transceiver. Good condition, new finals $400.
David VK4ADP (07) 800 1406

FL2100B Linear, 80/40/20/15/10m, including 2 brand new 572B tubes plus one as new spare tube, in VGC and working order for $1200.
Bernhard VK4EBV Tel: (07) 354 3779 after 5 p.m.

SX64 includes 5" colour monitor disc drive. Pakratt-64 HF/VHF Packet Amtor RTTY/CW. AAPRA HF/VHF Packet Modem for 64 and/or Vic 20. 12" green screen. Microlog HF/VHF RTTH ASCII CW for Vic 20.
Phone Gordon VK4FO (071) 951 533 B.H. (071) 952 805 A.H.
$1500 the lot.

FOR SALE SA

Telcon semi air spaced twin coax cable, 2kW to 2m. Transmitter, 6V6G osc 6V6 dblr 807 buffer 829B PA, 160 to 6m. Transmitting tubes 4-65A, 4E27 (813), 829B and socket, VCR139 and socket. Grundig reel-to-reel recorder (valves). 2 sets tubes for KW2000. Post-war tubes, receiving & TV.
VK5LC QTHR Phone (08) 271 6841

FOR SALE WA

MFJ CW/RTTY computer interface 1224 with RS232 adaptor, software for C64. Can be adapted other computers. Have no use - unwanted gift. $150 ono.
Paul VK6PY QTHR Ph. (09) 275 1617

Yaesu FC757AT Automatic A.T.U. $400
VK6ZN QTHR (09) 401 1984

FOR SALE TAS

Yaesu FRG-7 Receiver, fitted with extra XTAL filter for SSB $120
Mike VK7MC Ph. (002) 652 715.

ADVERTISER'S INDEX

HAMADS

Please Note: If you are advertising items For Sale and Wanted please use a separate form for each. Include all details; eg Name, Address, Telephone Number (and STD code), on both forms. Please print copy for your Hamad as clearly as possible.

*Eight lines free to all WIA members, ninth line for name and address Commercial rates apply for non—members. Please enclosed a mailing label from this magazine with your Hamad.

*Deceased Estates: The full Hamad will appear in AR, even if the ad is not fully radio equipment.

*Copy typed or in block letters to PO Box 300, Caulfield South, Vic 3162, by the deadline as indicated on page 1 of each issue.

*QTHR means address is correct as set out in the WIA current Call Book.

*A courtesy note will be forwarded to acknowledge that the ad has been received.

Ordinary Hamads submitted from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re—sold for merchandising purposes.

Conditions for commercial advertising are as follows: $22.50 for four lines, plus $2.00 per line (or part thereof) Minimum charge — $22.50 pre—payable.

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❑ Miscellaneous
❑ For Sale
❑ Wanted

Name: .....

Call Sign: .....

Address: .....

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DICK SMITH COMMUNICATIONS

Yaesu's Amazing FT-4700RH

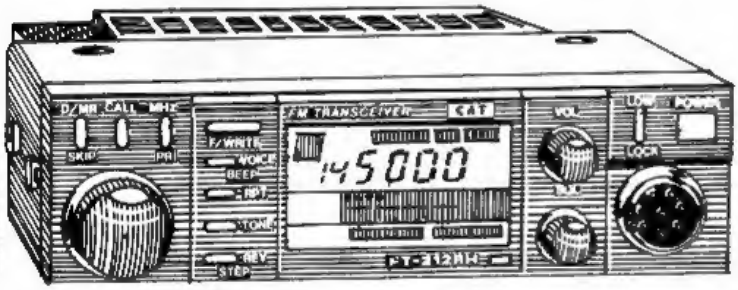
This is the 2m/70cm transceiver you've been waiting for! It boasts high power operation (50 watts on 2m, 40 watts on 70cm), with inbuilt cooling fan, detachable front panel for optional remote mounting of the transceiver body, true full-duplex operation (you can even listen to both bands sumultaneously!), 20 memories, 6 user selected tuning steps, the list goes on and on. Cat D-3300

2 YEAR WARRANTY

SUPER VALUE $1395

BONUS This month only, receive a YSK-4700 Remote Mounting Kit at NO CHARGE! Cat D-3301

Valued at $59.95



FT-212RH

A rugged yet compact 2 metre FM transceiver featuring 45 watts output for extended range, 20 memory channels coupled with a flexible "band" and "memory" scanning system, hand-held mic, optional DVS-1 digital voice recording module, and a 2 year extended warranty. Isn't this the reliable 2 metre mobile you've been looking for? Cat D-3494

$669

SAVE $30

35W 70cm also available. Cat D-3330 $649

FT-411

This ultra compact 2 metre hand-held offers an incredible array of features without the size and weight of previous sets. Compare! CPU control offers 49 freely tunable memories that store repeater offsets, 2 VFO's; huge 1000mAH capacity NiCad battery as standard (yes! 1 AH!) programmable power saver, fast keyboard frequency entry, heavy duty die-cast casing with rubber gasket seals, carry case, carry strap and charger. Cat D-3350

Complete Package

(More stock due shortly) **$549**

SUPER SPECIAL

FT-23R

Don't need the sophistication of the FT-411, but still want a reliable hand-held? The FT-23R offers 2.5 watts output, 10 memories, scanning, 600 mAH NiCad battery, diecast transceiver casing, carry case, charger and rubber gasket seals to keep out the dust and humidity that's hard to avoid while hand-held! Cat D-3490

Our best price ever! **$439**

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ORDER BY PHONE TOLL FREE (008) 22 6610 FOR 24 HOUR DESPATCH

THIS SCREEN CAN TELL YOU AS MUCH ABOUT THE IC-781 AS WE CAN.

The huge CRT display on this new HF transceiver will show at a glance all the functions we're about to describe here.

That's because it has a built in spectra scope for the first time, for programmable, multi-functional central monitoring.

Plus there's a VFO, A/B contents, memory contents, two menu screens, band scope, and 15 operational screens.

It also has a sub display, and its DDS system offers a lock-up time of just five milliseconds. So it's ideal for data communications systems like PACKET and AMTOR.

The dual watch function is a huge advantage on DX-peditions or when chasing DX-stations. And its computer-controlled twin PBT with high efficiency IF filter eliminates interference.

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There's a full and semi break-in function that can output up to 100 words per minute. And a p.a. unit that outputs 150W of power.

However, just because the IC-781 has so many state-of-the-art features, don't think ICOM haven't made it simple to use.

There is a built in 10-keyboard for easy operation. Or you can use the built in remote control communication interface-V system.

This lets you control your transceiver via a personal computer or other compatible equipment. Plus you have a 2 way sleep timer, and 5 separate automatic weekly timers.

For your nearest ICOM stockist, just call (008) 33 8915. And they'll tell you everything you need to know about the IC-781. Then once you've got one, the CRT display will tell you everything you need to know about what it's doing.

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The Hall Partnership IC010014